GROUP	3
EXHIBIT	
BU	

Agency / Organization

New Jersey Dept. of Health

Title

Paulsboro Fire Dept. - Public Employees Occupational Safety and Health Violations

State of New Jersey
DEPARTMENT OF HEALTH
DIVISION OF EPIDEMIOLOGY, ENVIRONMENTAL AND OCCUPATIONAL HEALTH
PO BOX 369
TRENTON, N.J. 08625-0369

www.nj.gov/health

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

MARY E. O'DOWD, M.P.H.
Commissioner

MEMORANDUM

To: Howard Black, Director
Division of Public Safety and Occupational Safety and Health
New Jersey Department of Labor and Workforce Development

From: Michael A. Coyne, MS
Enforcement Coordinator
Public Employees Occupational Safety and Health Program

Subject: Violations of the PEOSH Act
Inspection #: 316851732-Programmed

Date: June 13, 2013

I certify that the items on the Order to Comply are violations of N.J.S.A. 34:6A-25 et seq. In addition, a copy of the contact information for the complainant and/or employee representative is attached.

Attachments

Employer Representative

Alfonso Giampola
Paulsboro Councilman
1211 Delaware Street
Paulsboro NJ 08066

New Jersey Department of Labor and Workforce Development
Office of Public Employees' Occupational Safety and Health
1 John Fitch Way – 3rd Floor
PO Box 386
Trenton, NJ 08625
Phone: (609) 984-1389

NEW JERSEY DEPARTMENT OF LWD LABOR AND WORKFORCE DEVELOPMENT
nj.gov/labor

NOTICE OF ORDER TO COMPLY

To:
LeeAnn Ruggeri, Business Administrator
Township of Paulsboro
1211 Delaware Street
Paulsboro NJ 08066

Inspection Site:
Paulsboro Fire Department
1502 Swedesboro Ave
Paulsboro NJ 08066

Inspection Number: 316851732
Complaint Number: Programmed
Inspection Date(s): 2/20/2013 & 3/5/2013
Issuance Date: 6/13/2013
CSHO: Michael Boucher
Reason: Programmed

The Violation(s) described in this Citation and Notification of Penalty is (are) alleged to have occurred on or about the day(s) the inspection was made unless otherwise indicated within the description below.

The enclosed Order to Comply describes violations of the Public Employees' Occupational Safety and Health Act. The violations referred to in this Order must be abated by the dates listed unless within 15 working days (excluding weekends and State holidays) from the issuance of this Order to Comply you mail a notice of intent to contest to the Department of Labor and Workforce Development at the address shown above. Please refer to the enclosed Public Employees' Occupational Safety and Health Act which outlines your rights and responsibilities and which should be read in conjunction with this form. The Order will become the Final Order if no notice of intent to contest is filed as provided for in the Act or, if contested, the Order is affirmed by the Review Commission or a court.

Posting - The law requires that a copy of this Notice and the Order to Comply be posted immediately in a prominent place at or near the location of each violation cited herein, or, if it is not practicable because of the nature of the employer's operations, where it will be readily observable by all affected employees. This Order must remain posted until each violation cited herein has been abated, or for 15 working days (excluding weekends and State holidays), whichever is longer.

Informal Conference - An informal conference is not required. However, if you wish to have such a conference you may request one with the Office of Public Employees' Occupational Safety and Health during the 15 working day contest period by contacting the office shown above. During such an informal conference you may present any evidence or views which you believe would support an adjustment to the citation(s).

If you are considering a request for an informal conference to discuss any issues related to the Order to Comply, a written letter of intent to contest must be submitted to the Office of Public Employees' Occupational Safety and Health within 15 working days of issuance of the Order. The contest period is not interrupted by a request for an informal conference.

If you decide to request an informal conference, the Office of Public Employees' Occupational Safety and Health will schedule the conference, which will be conducted within 30 days of receipt of the request. Employees and/or employee representatives will be notified of their right to attend the conference. The Office of Public Employees' Occupational Safety and Health will arrange for representatives of the Department of Health to conduct conferences requested from Orders to Comply issued pursuant to a certification from the Commissioner of Health that an employer violation has been determined to exist within the Department of Health jurisdiction under the Act.

Any and all supporting documentation of existing conditions as well as any abatement steps taken thus far must be brought to the conference. If conditions warrant, an informal settlement agreement, which amicably resolves this matter without litigation or contest may be entered into.

Right to Contest - You have the right to contest this Order to Comply. You may contest all citation items or only individual items. You may also contest abatement dates without contesting the underlying violations. **Unless you inform the Office of Public Employees' Occupational Safety and Health in writing that you intend to contest the citation(s) and/or abatement dates within 15 working days of the issuance of this Order to Comply, then this Order to Comply shall become a final order.**

Penalties - The Act provides that if the time for compliance with an order of the Commissioner elapses, and the employer has not made a good faith effort to comply, the Commissioner shall impose a civil administrative penalty of up to $7,000 per day for each violation of a provision of N.J.S.A. 34:6A-25 et seq., or of a standard or regulation promulgated under that act, or of an order to comply. Any employer who willfully or repeatedly violates the requirements of this section or any standard, rule, order or regulation promulgated under that act shall be assessed a civil administrative penalty of up to $70,000 for each violation. Penalties imposed under this section may be recovered with costs in a civil action commenced by the Commissioner by a summary proceeding under "the penalty enforcement law" (N.J.S.A. 2A:58-1 et seq.) in the Superior Court or a municipal court, either of which shall have jurisdiction to enforce "the penalty enforcement law" in connection with this act. If the violation is of a continuing nature, each day during which it continues after the date given for compliance in accordance with the order of the Commissioner shall constitute an additional separate and distinct offense. If this penalty remains unpaid for more than 30 days, this order shall be recorded on the Judgment docket of the Superior Court.

Penalties will be based upon factors such as gravity of the violation, the probability that an injury or illness would result from the hazard, the good faith efforts of the employer to comply, the presence of meaningful safety and health programs and the history of previous violations.

Request to Delay Issuance of Penalty Order to Comply – When an employer submits a request to delay the issuance of an Order to Comply establishing penalties, the employer shall submit such written request 10 calendar days prior to the abatement date(s) established in the original Order to Comply.

Notification of Corrective Action - For **each** violation which you do not contest, you are required by 29 CFR 1903.19 to submit an Abatement Certification to the New Jersey Department of Health, PEOSH Program. This certification **must** be sent by you prior to the abatement date indicated on the citation. For **Willful** and **Repeat**

violations, documents (example: photos, copies of receipts, training records, etc.) demonstrating that abatement is complete must accompany the certification. Where the citation is classified as **Serious** and the citation states that abatement documentation is required, documents such as those described

above are required to be submitted along with the abatement certificate. If the citation indicates that the violation was corrected during the inspection, no abatement certification is required for that item.

Employer Discrimination Unlawful - The law prohibits discrimination by an employer against an employee for filing a complaint or for exercising any rights under this Act. An employee who believes that he/she has been discriminated against may file a complaint, no later than 180 days after the employee first had knowledge that such discrimination occurred, with the Office of Public Employees' Occupational Safety and Health at the address shown above.

Employer Rights and Responsibilities - The enclosed copy of the Public Employees' Occupational Safety and Health Act outlines additional employer rights and responsibilities and should be read in conjunction with this notification.

Notice to Employees - The law gives an employee or an employee representative the opportunity to object to any abatement date set for a violation if he/she believes the date to be unreasonable. The contest must be mailed to the Office of Public Employees' Occupational Safety and Health at the address shown above and postmarked within 15 working days (excluding weekends and State holidays) of the issuance of this Order to Comply.

Howard Black, Director
Division of Public Safety and Occupational Safety and Health

BY: ** P I I **

John Patterson, Chief
Office of Public Employees Occupational Safety and Health

New Jersey Department of Labor and Workforce Development
Office of Public Employees' Occupational Safety and Health (OPEOSH)

NOTICE TO EMPLOYEES

An informal conference has been scheduled with OPEOSH to discuss the Notice of Unsafe or Unhealthy Working Conditions (Notice) issued on 6/13/2013. The conference will be held at the OPEOSH office located at 1 John Fitch Way, 3rd Floor, PO Box 386, Trenton NJ 08625 on

_____ at _____. Employees and/or representatives of employees have a right to attend an informal conference.

New Jersey Department of Labor and Workforce Development
Office of Public Employees' Occupational Safety and Health

NEW JERSEY DEPARTMENT OF LWD LABOR AND WORKFORCE DEVELOPMENT nj.gov/labor

Notice of Unsafe or Unhealthful Working Conditions

Inspection Site:
Paulsboro Fire Department
1502 Swedesboro Ave
Paulsboro NJ 08066

Inspection Number: 316851732
Complaint Number: Programmed
Inspection Date(s): 2/20/2013 & 3/5/2013
Issuance Date: 6/13/2013
CSHO: Michael Boucher
Reason: Programmed

Citation 1 Item 1s Type of Violation: **Serious**

29 CFR 1910.120(f)(3)(ii) For employees who may have been injured, received a health impairment, developed signs or symptoms which may have resulted from exposure to hazardous substances resulting from an emergency incident, or exposed during an incident to hazardous substances at concentrations above the permissible exposure limits or the published exposure levels without the necessary personal protective equipment being used, a medical examination and consultation was not offered by their employer as soon as possible following the emergency incident or development of signs or symptoms.

LOC: Facility Wide

The Paulsboro Fire Department did not offer employees who may have been injured, received a health impairment, developed signs or symptoms which may have resulted from exposure to hazardous substances resulting from an emergency incident, or exposed during an emergency incident to hazardous substances at concentrations above the permissible exposure limits or the published exposure levels without necessary personal protective equipment being used, a medical examination and consultation as soon as possible following the emergency incident or development of signs or symptoms. On November 30, 2012 members of the Paulsboro Fire Department responded to a train bridge derailment, which resulted in exposure to vinyl chloride above the permissible exposure limit.

Date By Which Violation Must be Abated:		***July 15, 2013***
PER DIEM PENALTIES BEGINNING ON	**July 16, 2013**	**$2,800**

New Jersey Department of Labor and Workforce Development
Office of Public Employees' Occupational Safety and Health

NEW JERSEY DEPARTMENT OF LWD LABOR AND WORKFORCE DEVELOPMENT nj.gov/labor

Notice of Unsafe or Unhealthful Working Conditions

Inspection Site:
Paulsboro Fire Department
1502 Swedesboro Ave
Paulsboro NJ 08066

Inspection Number: 316851732
Complaint Number: Programmed
Inspection Date(s): 2/20/2013 & 3/5/2013
Issuance Date: 6/13/2013
CSHO: Michael Boucher
Reason: Programmed

Citation 1 Item 2s Type of Violation: **Serious**

29 CFR 1910.120(q)(3)(ii) The individual in charge of the ICS did not identify, to the extent possible, all hazardous substances or conditions present and shall address as appropriate site analysis, use of engineering controls, maximum exposure limits, hazardous substance handling procedures, and use of any new technologies.

LOC: Facility Wide

During the November 30, 2012 Paulsboro train derailment, the individual in charge of the ICS never determined through the use of air monitoring that the levels of vinyl chloride concentrations being reported during the emergency response were above maximum exposure limits and a hazardous exposure would result.

Date By Which Violation Must be Abated: ***Abated on March 5, 2013***

Citation 1 Item 3s Type of Violation: **Serious**

29 CFR 1910.120(q)(3)(iv) Employees engaged in emergency response and exposed to hazardous substances presenting an inhalation hazard or potential inhalation hazard, did not wear positive-pressure self-contained breathing apparatus until such time that the individual in charge of the ICS determined through the use of air monitoring that a decreased level of respiratory protection would not result in hazardous exposures to employees.

LOC: Facility Wide

During the November 30,2012 Paulsboro train derailment, employees of the Paulsboro Fire Department did not wear positive pressure self-contained breathing apparatus while engaged in the emergency response; although, air monitoring showed respiratory protection would be required to prevent hazardous exposures to employees.

Date By Which Violation Must be Abated: ***Abated on March 5, 2013***

New Jersey Department of Labor and Workforce Development
Office of Public Employees' Occupational Safety and Health

NEW JERSEY DEPARTMENT OF LWD LABOR AND WORKFORCE DEVELOPMENT nj.gov/labor

Notice of Unsafe or Unhealthful Working Conditions

Inspection Site:
Paulsboro Fire Department
1502 Swedesboro Ave
Paulsboro NJ 08066

Inspection Number: 316851732
Complaint Number: Programmed
Inspection Date(s): 2/20/2013 & 3/5/2013
Issuance Date: 6/13/2013
CSHO: Michael Boucher
Reason: Programmed

Citation 1 Item 4s Type of Violation: **Serious**

29 CFR 1910.120(q)(3)(v)) The individual in charge of the ICS did not limit the number of emergency response personnel at the emergency site, in those areas of potential or actual exposure to incident or site hazards, to those who were actively performing emergency operations.

LOC: Facility Wide

During the November 30, 2012 Paulsboro train derailment, the individual in charge of the ICS never limited the number of emergency response personnel at the emergency site, limited the number or personnel to areas of potential or actual exposure to the incident or site hazards, and to those who were actively performing emergency operations.

Date By Which Violation Must be Abated: ***Abated on March 5, 2013***

Citation 1 Item 5s Type of Violation: **Serious**

29 CFR 1910.120(q)(3)(vii)) The individual in charge of the ICS did not designate a safety officer, who is knowledgeable in the operations being implemented at the emergency response site, with specific responsibility to identify and evaluate hazards and to provide direction with respect to the safety of operations for the emergency at hand.

LOC: Facility Wide

During the November 30, 2012, Paulsboro train derailment, the individual in charge of the ICS did not designate a safety officer, who is knowledgeable in the operations being implemented at the emergency response site, with specific responsibility to identify and evaluate hazards and to provide direction with respect to the safety of operations for the emergency at hand.

Date By Which Violation Must be Abated: ***Abated on December 4, 2012***

New Jersey Department of Labor and Workforce Development
Office of Public Employees' Occupational Safety and Health

NEW JERSEY DEPARTMENT OF LWD LABOR AND WORKFORCE DEVELOPMENT nj.gov/labor

Notice of Unsafe or Unhealthful Working Conditions

Inspection Site:
Paulsboro Fire Department
1502 Swedesboro Ave
Paulsboro NJ 08066

Inspection Number: 316851732
Complaint Number: Programmed
Inspection Date(s): 2/20/2013 & 3/5/2013
Issuance Date: 6/13/2013
CSHO: Michael Boucher
Reason: Programmed

Citation 1 Item 6s Type of Violation: **Serious**

29 CFR 1910.120(q)(1) The employer did not develop and implement a written emergency response plan which included the requirements in 29 CFR 1910.120.

LOC: Facility Wide

The written Emergency Response Plan (ERP) that was developed and implemented to handle anticipated emergencies prior to the commencement of emergency response operations was not readily available for review.

Date By Which Violation Must be Abated:		***July 15, 2013***
PER DIEM PENALTIES BEGINNING ON	**July 16, 2013**	**$2,800**

New Jersey Department of Labor and Workforce Development
Office of Public Employees' Occupational Safety and Health

NEW JERSEY DEPARTMENT OF LWD LABOR AND WORKFORCE DEVELOPMENT nj.gov/labor

Notice of Unsafe or Unhealthful Working Conditions

Inspection Site:
Paulsboro Fire Department
1502 Swedesboro Ave
Paulsboro NJ 08066

Inspection Number: 316851732
Complaint Number: Programmed
Inspection Date(s): 2/20/2013 & 3/5/2013
Issuance Date: 6/13/2013
CSHO: Michael Boucher
Reason: Programmed

Signed on 6/13/2013 pursuant to the authority vested by law
in the New Jersey Department of Labor and Workforce Development.

Howard Black, Director
Division of Public Safety and Occupational Safety and Health

BY: **** PII ****
John Patterson, Chief
Office of Public Employees Occupational Safety and Health

DISCRIMINATORY ACTS AGAINST EMPLOYEES ARE UNLAWFUL – N.J.S.A. 34:6A-45 – No person shall discharge, or otherwise discipline, or in any manner discriminate against any employee because such employee has filed any complaint or instituted or caused to be instituted any proceeding under or related to this section. Any employee who believes that he has been discharged, disciplined, or otherwise discriminated against by any person in violation of this section, may within 180 days after the employee first has knowledge such violation did occur, file a complaint with the Commissioner of Labor and Workforce Development alleging that discrimination.

c: Complainant
Howard Black, Director
Employee Representative(s)

To:
LeeAnn Ruggeri, Business Administrator
Township of Paulsboro
1211 Delaware Street
Paulsboro NJ 08066

Inspection Number: 316851732
Complaint Number: Programmed
Inspection Date(s): 2/20/2013 & 3/5/2013
Issuance Date: 6/13/2013
CSHO: Michael Boucher
Reason: Programmed

Inspection Site:
Paulsboro Fire Department
1502 Swedesboro Ave
Paulsboro NJ 08066

EMPLOYER REQUIREMENTS FOR ABATEMENT VERIFICATION

Employers must provide the following information to verify abatement of PEOSH citations:

1. A statement noting whether or not correction has been accomplished for each citation item and instance identified on the Citation.
2. A description of the measures taken to accomplish correction; and
3. The date the correction was made.

A blank Abatement Verification Letter is enclosed for your use in meeting this requirement. Supporting documentation e.g., drawings/photographs, purchase/work orders, air sampling results, or any other related information may be included to assist us in verifying abatement. If additional space is needed, you may attach a continuation sheet or include a more detailed letter.

If abatement cannot be accomplished by the date identified on the citation, please call the Compliance Officer (listed above right) at (609) 984-1863, 10 calendar days before the abatement date for appropriate procedures to modify the abatement date(s).

To:
LeeAnn Ruggeri, Busines Administrator
Township of Paulsboro
1211 Delaware Street
Paulsboro NJ 08066

Inspection Number: 316851732
Complaint Number: Programmed
Inspection Date(s): 2/20/2013 & 3/5/2013
Issuance Date: 6/13/2013
CSHO: Michael Boucher
Reason: Programmed

Inspection Site:
Paulsboro Fire Department
1502 Swedesboro Ave
Paulsboro NJ 08066

REPLY TO: Michael Coyne, Enforcement Coordinator
PEOSH Program, 4th Floor
NJ Department of Health
P.O. Box 369
Trenton, NJ 08625-0369

ABATEMENT VERIFICATION LETTER

Listed below is the corrective action taken and date corrected for each citation by item and instance number.

Certification of Abatement Response by: _____

Title: _____

Date: _____

NARRATIVE REPORT
OSHA 1A
Additional Comments

Inspection Number: **316851732** CSHO ID: **C4835**
Referral – Paulsboro Fire Department

CSHOs arrived onsite and met with the Fire Chief Alfonso Giampola to gain access. CSHOs introduced themselves, showed credentials, and informed him of the inspection they needed to perform. Both parties proceeded to the Fire Chief's office and began the **opening conference**.

CSHOs reviewed the Employer/employee rights and responsibilities under the PEOSH Act, the standards to be covered and documents they would need to review during the inspection. Based on information gathered from other government agencies and employee complaints from various first responders, an inspection was focused on the Paulsboro Fire Department. Specifically, the investigation centered on the fire department because it was the acting incident commander during the Mantua Creek train derailment and release of vinyl chloride on November 30, 2012.

Standards covered:

Hazardous Waste Operations and Emergency Response (29 CFR 1910.120) – The following documents were requested during the opening conference: Written Emergency Response Plan and training records. Several sections of the written plan were made available at the time of inspection, but not the entire plan, which was subsequently located at Borough Hall. During the emergency response to the vinyl chloride release, the incident commander did not initially determine protective exposure levels, appoint a safety officer, limit personnel at the incident scene, there was no initial access to the Borough's emergency response plan, and the incident commander did not mandate respirator use when air monitoring levels were above exposure limits. Additionally, no medical surveillance was offered to exposed employees after the emergency response was completed. (Cite x 6)
Respiratory Protection Standard (29 CFR 1910.134) – The following documents were requested during the opening conference: Written respiratory protection program, medical evaluation forms, fit test records and training records. Forms were made available at the time of inspection.

On November 30, 2012, employees of the Paulsboro Fire Department, and many other mutual aid providers, responded to a train bridge derailment. During the accident, one of six derailed train cars, which contained 176,000-gallons of vinyl chloride, was breached releasing vinyl chloride into the air and water. During the emergency response, employees of the Paulsboro Fire Department, and many other mutual aid providers, were stationed and operating within the "hot zone" as identified by the incident commander, Paulsboro Fire Chief Alfonso Giampola. No respiratory protection was used; although, air monitoring by the Paulsboro Refinery HAZMAT team and an outside contractor, Center for Toxicology and Environmental Health (CTEH), detected levels of vinyl chloride above the PEL, STEL and action level. Subsequently, urine tests for first responders handled by CTEH had sampling results that represented exposures above the PEL.

Several responding firefighters from various organizations, that had complaints and concerns, were interviewed regarding their response to the incident. During the interview process, employees describe seeing signs of a possible exposure such as vapor clouds, frost lines on the bridge and train cars, smelling "sweet" odors and over-hearing air monitoring personnel announce elevated readings. Therefore, many first responsers believed safety was compromised and the incident command system, being directed by the Paulsboro Fire Department, did not properly protect employees from a chemical exposure.

Closing conference was held with all opening conference participants. It was recommended that the employer consider setting up an in house H&S committee, which would make the employer and all employees aware of concerns regarding H&S onsite. The violations and appropriate abatement dates were discussed and the inspection was completed.

New Jersey Department of Health and Senior Services
PEOSH Program

OSHA 1B Form (Worksheet)

CSHO	C4835	Inspection #	316851732	Date of Inspection	03/05/2013
Employer Name	Paulsboro Fire Department				
Employee Name	** P I I **			Occupation	Firefighter
Employee Address	** P I I **				
Employee City	** P I I **			Employee State	NJ
Employee Zip	** P I I **	Employee Phone #	** P I I **		
Total # Employees	25	Total Duration	12 hours	Frequency	1 day
Standard	29 CFR 1910.120(f)(3)(ii)			# of Instances of the Violation	1
Type of Violation	Serious	Citation #	1	Item #	1s
Abatement Period (# of calendar days or date abatement due)	30 Days				

Description of Citation(s)

LOCATION: Facility Wide

DESCRIPTION: The Paulsboro Fire Department did not offer employees who may have been injured, received a health impairment, developed signs or symptoms which may have resulted from exposure to hazardous substances resulting from an emergency incident, or exposed during an emergency incident to hazardous substances at concentrations above the permissible exposure limits or the published exposure levels without the necessary personal protective equipment being used, a medical examination and consultation as soon as possible following the emergency incident or development of signs or symptoms. On November 30, 2012, members of the Paulsboro Fire Department responded to a train bridge derailment, which resulted in exposure to vinyl chloride above the permissible exposure limit.

[29 CFR 1910.120(q)(9)(ii), which pertains to employees performing emergency response to hazardous substances release, states any emergency response employees who exhibit signs or symptoms which may have resulted from exposure to hazardous substances during the course of an emergency incident either immediately or subsequently, shall be provided with medical consultation as required in paragraph (f) of this section.]

HAZARD: For employees who may have been injured, received a health impairment, developed signs or symptoms which may have resulted from exposure to hazardous substances resulting from an emergency incident, or exposed during an emergency incident to hazardous substances at concentrations above the permissible exposure limits or the published exposure levels without the necessary personal protective equipment being used, a medical examination and consultation was not offered by their employer as soon as possible following the emergency incident or development of signs or symptoms.

EMPLOYEE EXPOSURE: On November 30, 2012, employees of the Paulsboro Fire Department responded to a train bridge derailment. During the accident, one of six derailed train cars, which contained 176,000-gallons of vinyl chloride, was breached releasing vinyl chloride into the air and water. Vinyl Chloride has a permissible exposure limit (PEL) of 1part per million (ppm) with an action level of 0.5 ppm. Additionally, no employee may be exposed to vinyl chloride at concentrations greater than 5 ppm averaged over any period not exceeding 15 minutes (STEL or short-term exposure limit).

During the emergency response, employees of the Paulsboro Fire Department were stationed and operating within the "hot zone" as identified by the incident commander, Paulsboro Fire Chief Alfonso Giampola. No respiratory protection was used; although, air monitoring for vinyl chloride detected levels above the PEL, STEL and action level. Responding members of the Paulsboro Fire Department began arriving in the "hot zone" at 0723, command had arrived at 0708 and 0719 respectively, and stayed for the duration of the incident. The Paulsboro Refinery HAZMAT team reported VOC concentrations at the incident scene at a maximum of 760 ppm at 0837 using MX6 iBrid photoionization detectors (PID). According to the manufacturers information, the MX6 iBrid PID has a response factor of 1.9 for vinyl chloride, which could have re-calculated the maximum to 1444 ppm. Additionally, refinery personnel also recorded uncorrected elevated PID levels during the day, for example 54 ppm at 1315 and 17.5 ppm at 1524. An outside contractor, Center for Toxicology and Environmental Health (CTEH), reported numerous results above the PEL using colorimetric detector tubes for vinyl chloride between 1339 and 2359 on November 30, 2012. Urine tests for first responders handled by CTEH had sampling results for thiodiglycolic acid, a metabolite of vinyl chloride, as high as 18 milligrams/gram (mg/g) creatinine, which translates to vinyl chloride air concentrations over 16 ppm. During the interview process, employees describe seeing vapor clouds, frost lines on the bridge and train cars, smelling "sweet" odors and hearing air monitoring personnel announce elevated readings.

EMPLOYER KNOWLEDGE: During the opening conference, Chief Giampola provided copies of the Standard Operating Procedures (SOP) governing the fire department. SOP 205, titled *Reporting Injuries and Accidents*, outline the steps employees must follow to report injuries through the proper chain of command. Chief Giampola stated "he knew the urine test results from members of the Paulsboro Fire Department and had each employee complete the appropriate workman compensation forms". Chief Giampola further stated "his urine test results were 18 mg/g and they were the highest that he had heard, which was well over the PEL if you compare it on the CTEH report". The individual in charge of the ICS, Chief Giampola, never determined through the use of air monitoring that the levels of vinyl chloride concentrations being reported to him during the emergency response required respiratory protection or the result would be a hazardous exposures to employees.

Robert Hill, Director of the Gloucester County Fire Academy, was appointed safety office on December 4, 2012, and gave safety briefings each morning, during which he stated urine test are being collected for each responder to identify exposures. Chief Giampola was the intial incident commander and requested Director Hill's assistance. The Chief remained the fire branch commander as part of the Unified Command structure, so he was involved in the entire process and was aware of the urine sampling and their results.

Paulsboro Police Department

Incident Detail Report

Notes

Text Date	Unit	PFCode	Notes
11/30/12 7:05:08			Update reviewed by dispatcher- Taylor, Kathy R
11/30/12 7:06:59		NZ6108	4 tank cars in water leaking / 3 box cars bridge collapsed req conrail rep to site
11/30/12 7:08:22		NZ6108	1702 on loc r 1701
11/30/12 7:09:27		NZ6108	1701 req cbrne and paulsboro refining hazmat
11/30/12 7:10:21		NZ6108	plack 1086
11/30/12 7:11:05		KT5060	per police at least 1 propane tank leaking
11/30/12 7:11:15		NZ6108	winds light/calm surface winds vertical w/sw
11/30/12 7:13:28		NZ6108	valero contacted for hazmat
11/30/12 7:14:05		NZ6108	r em 17
11/30/12 7:16:50		NZ6108	lumber and plastic in box cars
11/30/12 7:18:31		NZ6108	pat robinson from valero enroute
11/30/12 7:19:01		NZ6108	contact njdot 1701 on locarion
11/30/12 7:20:51		NZ6108	comand post at [redacted] e jefferson
11/30/12 7:22:43		NZ6108	county cbrne notified
11/30/12 7:23:25		NZ6108	Os 1718 1721
11/30/12 7:27:05		NZ6108	contact coast guard / tidal water also info other materials may be in cars
11/30/12 7:28:50		NZ6108	r 5804
11/30/12 7:28:53			Update reviewed by dispatcher- Gallo, Andrew M
11/30/12 7:32:24		NZ6108	paluisboro refine on loc
11/30/12 7:33:08		NZ6108	notify dist 6 train is his area also
11/30/12 7:35:23		NZ6108	now reporting 5 cars in water
11/30/12 7:41:07		NZ6108	1072 enroute to fire acad w/ 4/ hasmat tech
11/30/12 7:44:12		EH5057	USCG responding
11/30/12 7:44:32		NZ6108	req conrail be contacted for shipping papers
11/30/12 7:48:25		NZ6108	r em6
11/30/12 7:49:06		NZ6108	req alan richer (conrail hazmat) contacted
11/30/12 7:50:35		NZ6108	notify solvay gu utilites and moonstar
11/30/12 7:53:03		NZ6108	per pd sheltering in place

PAULSBORO FIRE DEPARTMENT 2012 FIRE REPORT

Run # _____ Date ____/____ Time_____ D N Type _____ OIC _____

Location _____ 1721

Condition Found on Location _____

Action Taken _____

Remarks: 1711 1900 - 1245 BOTH DAYS

G63 2:30 - 4:30

Hose: 1"_____, 1.5" _____, 1.75"_____, 3"_____, 4"_____, 5"_____

OFFICERS

	FRI.	SAT.
1701 - M. Licciardello	✓	✓
1702 - A. Giampola	✓	✓
1703 - G. Stevenson	✓	
1704 - C. James	✓	✓
1705 - G. Roemmich		

FUEL LEVEL	1711	1721	1718
FULL			
7/8			
3/4			
1/2			
1/4			
1/8			

FIREFIGHTERS

	F.	S.
** PII **	✓	✓
	✓	✓
	✓	School
	✓	✓
	✓	✓
	✓	

	F.	S.
** PII **	✓	
	✓	
	✓	✓
	✓	
	✓	✓
	✓	✓

# of FF's_____ Losap Points_____

Paulsboro Refinery Hazardous Materials Response Team Mutual Aid

11/30/12 Personnel Involvement & Timestamp of Air Monitoring Data

Paulsboro Refinery Personnel & Involvment: **1) Incident Comment Post** - Patrick Robinson, Calvin Harrje, Ed Bundens **2) Incident Monitoring Team** - Ravi Jarecha, Tom Knopple, Mark McGill, Jason Simon, Bill McCall, Jeremy Harrje, Nick DeCarlo, Alex Jepsen, Adegbenga Badru **3) Paulsboro Refinery (PBR) Monitoring Team** - Kurt Merbach **4) Southwest Monitoring Team** - Mike Licciardello, Scott Reid

The Paulsboro Refinery Hazardous Materials Response Team researched Vinyl Chloride and determined that the Vapor Density is 2.21* (heavier than air) and has an Ionization Potential of 9.99eV*, which could be detected using Photoionization Detectors (PIDs) with a 10.6eV lamp. The Paulsboro Refinery air monitoring instrumentation used during this incident was Industrial Scientific MX6 with 10.6eV PID. The instruments are calibrated monthly and bump tested daily automatically via iNet docking stations. The PIDs are calibrated to 100 ppm Isobutylene; therefore, the Vinyl Chloride PID Response Factor is 1.9 per the attached PID Response Factors table. For example, 100 ppm on a Paulsboro Refinery PID would be 190 ppm of Vinyl Chloride (assuming this is the only material present). The Response Factors were researched after the incident monitoring data was obtained. All results reported below is raw data, the Response Factor is NOT applied.

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Time	Readings (ppm)	Notes	Location
8:33	631	HazMat Team arrive on location, cannot zero equip., obtain high level alarms, informs IC of high levels.	Corner of Commerce & Jefferson
8:34	694		Corner of Commerce & Jefferson
8:37	760		Corner of Commerce & Jefferson
8:40	0	HazMat Teams leaves incident and goes West to zero instruments.	Delaware & Billings
8:44	193	Shortly after zeroing equipment, obtain readings >100 near Heritages	Delaware & Billings
8:48	111		Delaware & Billings
8:55	35	HazMat (Incident Monitoring) Team moves Northwest out of high readings zone	Delaware & Roosevelt
8:55	35		Delaware in front of Paulsboro HS
9:00	4		Delaware & Roosevelt
9:05	0-5		Delaware in front of Paulsboro HS
9:30	11	PBR Monitoring Team	Billingsport Road - ExxonMobil Parking Lot
9:30	0		Billingsport Road - Paulsboro Refinery Main Gate
9:40	0	Southwest Monitoring Team	Billingsport Road & Broad Street - Ames Parking Lot
9:55	10	HazMat Team return to Incident Location	Conrail Shack North Side of RR Tracks, West side of Mantua Creek
10:00	1.2	Southwest Monitoring Team	Billingsport Road & Broad Street - Ames Parking Lot
10:05	7		Billingsport Road & Broad Street - Ames Parking Lot
10:10	9	PBR Monitoring Team	Billingsport Road RR Tracks Overpass
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10:21	16		Billingsport Road & Broad Street - Ames Parking Lot
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10:43	0	NuStar Monitoring Team**	NuStar Main Gate
10:43	1		NuStar Refinery Peak Reading
10:55	2	Incident Monitoring Team	Broad Street (Rt. 44) Bridge
11:00	0	Southwest Monitoring Team	Broad Street - Gibbstown Fire Dept, Old Wawa, Broad St. School
11:06	0-1	NuStar Monitoring Team**	NuStar Refinery Peak Reading
11:30	0	Incident Monitoring Team	Along Mantua Creek North & South of Incident location
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14:00	Paulsboro Incident Monitoring Team was informed by members of the Gloucester Country CBRN Team to clear the area and discontinued monitoring at incident.		

** *NuStar Monitoring Team data called into Paulsboro Refinery Personnel. Nu Star data not included with data downloads, monitoring instrumentation, method, and exact locations are unknown to Paulsboro Refinery Team personnel.*

Table 2
Hand-held Real-time Summary – November 30th 13:39 – 23:59

Analyte	Number of Readings	Number of Detections	Highest Concentration
Community			
LEL	77	0	<1.0 %
O2	54	54	21.3 %
Vinyl Chloride 131L	15	12	1.2 ppm
VOC	85	8	0.5 ppm
Evacuated Area			
LEL	21	0	<1.0 %
O2	11	11	21.6 %
Vinyl Chloride 131L	8	7	3 ppm
VOC	25	5	4.5 ppm
Work Area			
LEL	2	0	<1.0 %
O2	2	2	21.6 %
Vinyl Chloride 131L	3	2	0.8 ppm
VOC	4	0	<0.1 ppm

PPM – parts per million

CENTER FOR TOXICOLOGY
AND ENVIRONMENTAL HEALTH, LLC

H8-13 10AM

December 6, 2012

Name

Agency

Date of Collection 11/30/2012

RE: Urine testing for Thiodiglycolic Acid (TdGA)

On Friday November 30, 2012 there was a release of Vinyl Chloride from a ruptured railcar in Paulsboro, NJ. Numerous workers were exposed to potentially high air concentrations of Vinyl Chloride without respiratory protection, before air monitoring was in place.

Emergency Responders (fire, police, EMS, etc) were self-identified as being exposed, and presented to the Gloucester County Fire Marshall's office for collection of urine samples for Thiodiglycolic Acid (abbreviated TdGA), which were sent to a national laboratory (NMS Labs). TdGA is a breakdown product of vinyl chloride, it can be used to evaluate workers if they had exposures to vinyl chloride levels higher than the current workplace limits (OSHA Permissible Exposure Level or PEL). However, TdGA can also be found normally in the urine of individuals without vinyl chloride exposure. A normal concentration, as indicated by the testing laboratory, is less than 2 mg/gram creatinine.

Results:

The urine TdGA level of the individual listed above was 13 mg/g creatinine

___ This TdGA level is normal (not elevated)

X This TdGA level is elevated. As a guideline, prior occupational studies have shown that workers exposed to various levels of Vinyl Chloride had the following urine TdGA levels, when tested after several shifts of workplace exposures:

Vinyl Chloride Air Concentrations	Urine TdGA Levels (mg per 24 hours)
1 ppm (current OSHA standard)	1.8
2 ppm	2.4
4 ppm	4.5
8 ppm	8.2
16 ppm	10.6

It is important for each tested individual to discuss these results with their occupational physician who is in charge of monitoring workplace exposures and medical issues, to determine if there is any further testing recommended.

Again, we appreciate all your help. Should your Occupational Physician have any questions regarding the test results or how to interpret them, please do not hesitate to call our offices at 501-614-2834.

Sincerely,

CTEH

PAULSBORO FIRE DEPARTMENT DISTRICT	Policies, Procedures and Standard Operating Guidelines Manual Reporting Injuries and Accidents	Page 1 of 2 Document ID: SOG # 205 Issue No: 1 Issued Reviewed Approved by: District Fire Chief Executive Committee

1. **Purpose and Scope**
   1.1 This guideline has been established to establish a rapid and consistent procedure for reporting injuries and accidents. This policy has been designed to provide an effective way to report work place injuries and provide a guideline for the officers and members to comply with the insurance, Federal and State mandates.

2. **Reporting Injuries**
   2.1 All injuries or suspected injuries that occur during emergency responses, training, any other Fire Department function or anything that occurs while on Fire Department owned or leased property must be reported immediately to the highest ranking on scene officer or senior member.
   2.2 It is the duty of every member to report such injury, or suspected injury, to the Officer in charge at the time of the incident. In the cases where there is no supervision present then the injured party shall notify a Fire Department officer immediately.
   2.3 The on-scene officer or senior member shall ensure activation of the EMS system for any injury that requires that level of care. It is imperative that proper and timely care be given to the injured person(s).
   2.4 The on-scene officer or senior member shall then provide follow-up notifications to the senior officers. The notifications shall continue to ensure that the District Chief have been notified. The District Chief should notify the Borough Administrator. The senior officer that has been contacted live shall proceed with the following notifications (note: leaving voice mail and/or emails do not constitute a sufficient contact to ensure the following notifications will be made).
      2.4.1 The Borough Administrator shall, in turn, notify Scibal and Associates, the claims coordinator for the Joint Insurance Fund, by calling 800-653-8400.
      2.4.2 If the injury requires a visit to the hospital, then the Borough of Paulsboro Joint Insurance Fund (JIF) Claims Coordinator (John Salvatore) must be notified by calling 856-423-1500. He will assist to process the paperwork so that all of the claims are paid as appropriate.
      2.4.3 If the injury is Recordable, then notify the New Jersey Department of Labor within the 8-hour limit, by calling 609-292-7172. The Borough of Paulsboro will then update the I-300 Fire Department log.
      2.4.4 All non-hospitalized injuries will require the injured part to go to the Borough Hall within 1 business day, to meet with the JIF Claims Coordinator and complete the paperwork.

2.4.5 All copy of all associated paperwork must be given to District Chief so that it may be placed in the member's medical file.

2.4.6 When an OSHA Recordable case is involved the physician should present a note that specifies one of the following:

1. No work restrictions.
2. Work activities with restrictions (i.e. restricted duties).
3. Prohibits all work activities.

This note shall be presented to the District Chief at which time the limitations will be reviewed with the member. Usually any physical limitations will negate any involvement with training and emergency response; however, the exact limits will be discussed with the District Chief. In the cases where the physician imposes work restrictions or prohibits all activities, then a written release (i.e. return to duty) note must be obtained prior to resuming unrestricted duties with the Fire Company. Usually OSHA recordable cases will require follow-up with the Fire Department Physician.

3. **Reporting Accidents**

3.1 All accidents involving Department equipment, apparatus or property shall be immediately reported to the Department officers, using the chain of command. The notification process shall continue until the District Chief is notified. The senior officer that is contacted live should contact the District Chief. There is nothing in this procedure that shall impede the quick and immediate response for live safety issues. Patient care is paramount and the follow-up administrative duties are secondary. The senior officer that was contacted live shall follow-up with the following notifications.

3.1.1 Ensure that the proper police reports have been filed (if applicable).

3.1.2 Notify Scibal and Associates, the claims coordinator for the Joint Insurance Fund, by calling 800-653-8400.

3.1.3 Notify the Borough of Paulsboro Claims Coordinator, John Salvatore, by calling 856-423-1500. He will assist to process the paperwork so that all of the claims are paid as appropriate.

Serious Penalty Calculation - (rev-04/01/2012)
Paulsboro Fire Department
1502 Swedesboro Avenue
Paulsboro, NJ 08066

Inspection: 316851732

Citation 1, Item 1s

Gravity Based Penalty:

Severity:	High	Death, injuries resulting in permanent disability; or chronic, irreversible illnesses
Probablity:	Greater	Likelihood of injury or illness is great
High/Greater	$7,000	

Adjustment Factors:

Size (SF):	0.40	1 to 25 employees
Good Faith (GFF):	1.00	No-reduction given if there is no safety and health program or where a willful violation is found
History (HF):	1.00	No reduction shall be given to employers who have no PEOSH inspection history inthe past five years, or for employers who have been cited by PEOSH for any serious citation other than a High/Greater gravity based penalty in the past five years.

Penalty:

Perdiem Penalty:	**$2,800**
Abatement Date:	6/17/13
Total Accrual (Days):	-53
Accrued Penalty to Date:	**-$148,400**

This penalty was arrived at using the PEOSH Procedure for Enforcement. This gravity based penalty was derived using the following formula:(((GBP x HF) x GFF) x SF) = $Penalty/day

Note Minimum Penalty is $500/day

New Jersey Department of Health and Senior Services
PEOSH Program

OSHA 1B Form (Worksheet)

CSHO	C4835	Inspection #	316851732	Date of Inspection	03/05/2013
Employer Name	Paulsboro Fire Department				
Employee Name	** P I I **			Occupation	Firefighter
Employee Address	** P I I **				
Employee City	** P I I **			Employee State	NJ
Employee Zip	** P I I **	Employee Phone #	** P I I **		
Total # Employees	25	Total Duration	12 hours	Frequency	1 day
Standard	29 CFR 1910.120(q)(3)(ii)			# of Instances of the Violation	1
Type of Violation	Serious	Citation #	1	Item #	2s
Abatement Period (# of calendar days or date abatement due)	Abated				

Description of Citation(s)

LOCATION: Facility Wide

DESCRIPTION: The individual in charge of the ICS, Paulsboro Fire Chief Alfonso Giampola, never determined through the use of air monitoring that the levels of vinyl chloride concentrations being reported to him during the emergency response were above the maximum exposure limits and a hazardous exposure would result.

HAZARD: The individual in charge of the ICS did not identify, to the extent possible, all hazardous substances or conditions present and shall address as appropriate site analysis, use of engineering controls, maximum exposure limits, hazardous substance handling procedures, and use of any new technologies.

EMPLOYEE EXPOSURE: On November 30, 2012, employees from the Paulsboro Fire Department responded to a train bridge derailment. During the accident, one of six derailed train cars, which contained 176,000-gallons of vinyl chloride, was breached releasing vinyl chloride into the air and water. Vinyl Chloride has a permissible exposure limit (PEL) of 1part per million (ppm) with an action level of 0.5 ppm. Additionally, no employee may be exposed to vinyl chloride at concentrations greater than 5 ppm averaged over any period not exceeding 15 minutes (STEL or short-term exposure limit).

During the emergency response, employees of the Paulsboro Fire Department were stationed and operating within the "hot zone" as identified by the incident commander. No respiratory protection was used; although, air monitoring for vinyl chloride detected levels above the PEL, STEL and action level. Responding members of the Paulsboro Fire Department began arriving in the "hot zone" at 0723, command had arrived at 0708 and 0719 respectively, and stayed for the duration of the incident. The Paulsboro Refinery HAZMAT team reported VOC concentrations at the incident scene at a maximum of 760 ppm at 0837 using MX6 iBrid photoionization detectors

(PID). According to the manufacturers information, the MX6 iBrid PID has a response factor of 1.9 for vinyl chloride, which could have re-calculated the maximum to 1444 ppm. Additionally, refinery personnel also recorded uncorrected elevated PID levels during the day, for example 54 ppm at 1315 and 17.5 ppm at 1524. An outside contractor, Center for Toxicology and Environmental Health (CTEH), reported numerous results above the PEL using colorimetric detector tubes for vinyl chloride between 1339 and 2359 on November 30, 2012. Urine tests for first responders handled by CTEH had sampling results for thiodiglycolic acid, a metabolite of vinyl chloride, as high as 18 milligrams/gram (mg/g) creatinine, which translates to vinyl chloride air concentrations over 16 ppm. During the interview process, employees describe seeing vapor clouds, frost lines on the bridge and train cars, smelling "sweet" odors and hearing air monitoring personnel announce elevated readings.

EMPLOYER KNOWLEDGE: At 0710, on November 30, 2012, the placard number 1086 for vinyl chloride was reported from the Paulsboro train derailment, across the Gloucester County Communication Center's radio notification system. Upon arrival at the incident scene, reference material was obtained such as the DOT Emergency Response Guidebook, which states for any large spill, an initial downwind evacuation for at least 800 meters should be considered. Additionally, the MSDS for vinyl chloride was obtained by the incident commander from the ATSDR website, which lists a permissible exposure limit (PEL) of 1 part per million (ppm). According to Patrick Dolgos's activity form (ICS 214) from the Gloucester County CBRNE Team, at 0740 he approached the incident commander and recommended relocation of the command post further away. Finally, at 1048, the operations and command post was moved to Borough Hall due to hazardous conditions, according to the Gloucester County communication center's radio log.

At no time was the order given by any field commander to wear positive pressure self-contained breathing apparatus while engaged in the emergency response; although, air monitoring showed elevated level of respiratory protection would be required to prevent hazardous exposures to employees. During employee interviews, no employee could identify the correct health based standard for vinyl chloride, its odor threshold or when respiratory protection would be required. It was not until Robert Hill, Director of the Gloucester County Fire Academy, was appointed safety office on December 4, 2012, and gave safety briefings each morning, during which he related this information. Chief Giampola had requested Director Hill's assistance on to participate as the site's Safety Officer for the fire branch.

ATSDR Agency for Toxic Substances & Disease Registry

Medical Management Guidelines for Vinyl Chloride (C_2H_3Cl)

CAS# 75-01-4
UN# 1086

PDF Version, 54 KB

Synonyms include chloroethene, chloroethylene, 1-chloroethylene, ethylene monochloride, monochloroethylene, monovinyl chloride, MVC, VC, VCM, and vinyl chloride monomer.

- Persons exposed only to vinyl chloride gas pose no risk of secondary contamination. Persons whose clothing or skin is contaminated with pressurized liquid vinyl chloride can secondarily contaminate rescuers by direct contact or through off-gassing of vapor.
- At all ambient temperatures, vinyl chloride is an extremely flammable and potentially explosive gas that is heavier than air. It has a mild, sweet odor, but odor is not an adequate warning of hazardous concentrations.
- Inhalation is the major route of vinyl chloride exposure; absorption is rapid and nearly complete. Gastrointestinal absorption is unlikely as vinyl chloride is a gas at room temperature. Dermal absorption is negligible.

General Information

Description

At room temperature, vinyl chloride is a colorless, highly flammable, potentially explosive gas. It has a faint sweet odor. The odor threshold for vinyl chloride is about 3,000 ppm in air, depending on the individual. When confined under high pressure in special containers, vinyl chloride exists in a liquefied state. It is shipped and handled this way. When burned or heated to a high enough temperature, vinyl chloride decomposes to hydrogen chloride, carbon monoxide, carbon dioxide, and traces of phosgene. Vinyl chloride should be stored in a cool, dry, well ventilated location, separate from oxidizing materials and accelerants. Phenol is often added as a stabilizer.

Routes of Exposure

Inhalation

Inhalation is the primary route of exposure, and vinyl chloride is readily absorbed from the lungs. Its odor threshold is too high to provide an adequate warning of hazardous concentrations. The odor of vinyl chloride becomes detectable at around 3,000 ppm and the OSHA PEL is 1 ppm (8-hour TWA). Therefore, workers can be overexposed to vinyl chloride without being aware of its presence. A 5-minute exposure to airborne concentrations of 8,000 ppm can cause dizziness. As airborne levels increase to 20,000 ppm, effects can include drowsiness, loss of coordination, visual and auditory abnormalities, disorientation, nausea, headache, and burning or tingling of the extremities. Exposure to higher concentrations of vinyl chloride for longer durations can cause death, presumably due to central nervous system

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- EXTREMELY FLAMMABLE.
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Silane will ignite spontaneously in air.
- Those substances designated with a (P) may polymerize explosively when heated or involved in a fire.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH

- Vapors may cause dizziness or asphyxiation without warning.
- Some may be toxic if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

PUBLIC SAFETY

- **CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

EMERGENCY RESPONSE

FIRE

- DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.

Small Fire

- Dry chemical or CO_2.

Large Fire

- Water spray or fog.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Stop leak if you can do it without risk.
- Do not touch or walk through spilled material.
- Do not direct water at spill or source of leak.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Isolate area until gas has dispersed.

FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Table 2
Hand-held Real-time Summary – November 30th 13:39 – 23:59

Analyte	Number of Readings	Number of Detections	Highest Concentration
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PPM – parts per million

Paulsboro Refinery Hazardous Materials Response Team Mutual Aid

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Safety Briefing for all Fire Branch Apparatus Field Deployment
Developed 2012-12-4 @ 1330 Hours

This Safety Briefing is to be given to all Fire Branch personnel as they are deployed to the scene. This will typically be given by the Deputy Operations Section person.

Key Points to Cover:

- Your safety, the team safety and incident safety are the priority.
- Shall check in at the ICP at least 15 minutes prior to start of rotation.
- Shall receive a Safety Briefing (review of this document).
- Shall have completed the ICS 214 Activity Log.

Need to stress with on scene FD personnel two issues:

1. **Should there be an exposure the urine test is voluntary but understand that it must be obtained within 24 hours for the most effective results.**
2. **Should there be an evacuation from the scene then notify County Communications to ensure that the PD is notified so they can evacuate too.**

- No rings, jewelry, earrings, etc.
- Wear your PPE as appropriate; should have gloves at all times
- Do not walk and talk
- Use cell phones at a safe location; definitely not in the hot zone.
- No smoking unless in a safe area
- Wear seat belts
- Must use spotter when backing
- Be aware of pinch points
- Make your PPE needs known
- Avoid dehydration issues
- Everyone must look out for each other
- Be courteous when being corrected for PPE/safety deficiencies
- Area will be cleared of unnecessary personnel when transfer begins
- Vinyl chloride safety
    - Flammable vapor
    - Stay upwind
    - Evacuation signal is 3 short blasts followed by one long one by the fire trucks. Go to _____.
- Respiratory protection is important and may be needed if readings elevate. Constant monitoring is being completed by CTH and EPA. Any monitoring issues contact Kyle (CTH) 501-366-2698
    - OSHA protocols must be followed to include:
        - Medical surveillance including an annual Physicians Examining Opinion
        - Fit testing for the particular respirator
        - No facial hair that would interfere with the respirator seal
    - PEOSH
        - Must be New Jersey Firefighter 1 credentialed
    - 1PPM is the threshold for action

Serious Penalty Calculation - (rev-04/01/2012)
Paulsboro Fire Department
1502 Swedesboro Avenue
Paulsboro, NJ 08066

Inspection: 316851732

Citation 1, Item 2s

Gravity Based Penalty:

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High/Greater	$7,000	

Adjustment Factors:

Size (SF):	0.40	1 to 25 employees
Good Faith (GFF):	1.00	No-reduction given if there is no safety and health program or where a willful violation is found
History (HF):	1.00	No reduction shall be given to employers who have no PEOSH inspection history inthe past five years, or for employers who have been cited by PEOSH for any serious citation other than a High/Greater gravity based penalty in the past five years.

Penalty:

Perdiem Penalty:	**$2,800**
Abatement Date:	6/17/13
Total Accrual (Days):	-53
Accrued Penalty to Date:	**-$148,400**

This penalty was arrived at using the PEOSH Procedure for Enforcement. This gravity based penalty was derived using the following formula:(((GBP x HF) x GFF) x SF) = $Penalty/day

Note Minimum Penalty is $500/day

New Jersey Department of Health and Senior Services
PEOSH Program

OSHA 1B Form (Worksheet)

CSHO	C4835	Inspection #	316851732	Date of Inspection	03/05/2013
Employer Name	Paulsboro Fire Department				
Employee Name	** P I I **			Occupation	Firefighter
Employee Address	** P I I **				
Employee City	** P I I **			Employee State	NJ
Employee Zip	** P I I **	Employee Phone #	** P I I **		
Total # Employees	25	Total Duration	12 hours	Frequency	1 day
Standard	29 CFR 1910.120(q)(3)(iv)	# of Instances of the Violation	1		
Type of Violation	Serious	Citation #	1	Item #	3s
Abatement Period (# of calendar days or date abatement due)	Abated				

Description of Citation(s)

LOCATION: Facility Wide

DESCRIPTION: Employees of the Paulsboro Fire Department were never instructed by a field commander to wear positive pressure self-contained breathing apparatus while engaged in the emergency response; although, air monitoring showed an elevated level of respiratory protection would be required to prevent hazardous exposures to employees.

HAZARD: Employees engaged in emergency response and exposed to hazardous substances presenting an inhalation hazard or potential inhalation hazard did not wear positive pressure self-contained breathing apparatus while engaged in emergency response, until such time that the individual in charge of the ICS determines through the use of air monitoring that a decreased level of respiratory protection will not result in hazardous exposures to employees.

EMPLOYEE EXPOSURE: On November 30, 2012, employees of the Paulsboro Fire Department responded to a train bridge derailment. During the accident, one of six derailed train cars, which contained 176,000-gallons of vinyl chloride, was breached releasing vinyl chloride into the air and water. Vinyl Chloride has a permissible exposure limit (PEL) of 1part per million (ppm) with an action level of 0.5 ppm. Additionally, no employee may be exposed to vinyl chloride at concentrations greater than 5 ppm averaged over any period not exceeding 15 minutes (STEL or short-term exposure limit).

During the emergency response, employees of the Paulsboro Fire Department were stationed and operating within the "hot zone" as identified by the incident commander, Paulsboro Fire Chief Alfonso Giampola. No respiratory protection was used; although, air monitoring for vinyl chloride detected levels above the PEL, STEL and action

level. Responding members of the Paulsboro Fire Department began arriving in the "hot zone" at 0723, command had arrived at 0708 and 0719 respectively, and stayed for the duration of the incident. The Paulsboro Refinery HAZMAT team reported VOC concentrations at the incident scene at a maximum of 760 ppm at 0837 using MX6 iBrid photoionization detectors (PID). According to the manufacturers information, the MX6 iBrid PID has a response factor of 1.9 for vinyl chloride, which could have re-calculated the maximum to 1444 ppm. Additionally, refinery personnel also recorded uncorrected elevated PID levels during the day, for example 54 ppm at 1315 and 17.5 ppm at 1524. An outside contractor, Center for Toxicology and Environmental Health (CTEH), reported numerous results above the PEL using colorimetric detector tubes for vinyl chloride between 1339 and 2359 on November 30, 2012. Urine tests for first responders handled by CTEH had sampling results for thiodiglycolic acid, a metabolite of vinyl chloride, as high as 18 milligrams/gram (mg/g) creatinine, which translates to vinyl chloride air concentrations over 16 ppm. At 1613 on the day of the incident, unknown first responders donned their SCBAs while monitoring air levels of 17 ppm, according to the Gloucester County communication center's radio log. During the interview process, employees describe seeing vapor clouds, frost lines on the bridge and train cars, smelling "sweet" odors and hearing air monitoring personnel announce elevated levels as high as 30 ppm.

EMPLOYER KNOWLEDGE: On November 30, 2012, a 911 call at 0706 stated 4 tank cars were in the water and leaking after a bridge collapsed along the Mantua Creek in Paulsboro, New Jersey. A follow-up radio transmission at 0710 identified the placard #1086, which is for vinyl chloride. The incident commander, Fire Chief Alfonso Giampola, responded to the scene and was on location at 0719. Upon arrival at the incident scene, reference material was obtained such as the DOT Emergency Response Guidebook, which states for any large spill, an initial downwind evacuation for at least 800 meters should be considered. Additionally, the MSDS for vinyl chloride was obtained by the incident commander from the ATSDR website, which lists a permissible exposure limit (PEL) of 1 part per million (ppm). No respiratory protection was used; although, air monitoring for vinyl chloride detected levels above the PEL, STEL and action level.

From the NTSB interview transcript, Chief Giampola stated "there was a cloud that came out. We thought it was fog rolling in off the marshes. After -- in hindsight it was not. It was vinyl chloride that was -- it looked like it came off the marshes on the east side of the railroad tracks. I don't know if the wind was blowing from that way but it came off and it rolled up and rolled up onto the ground. After about -- again, my timeline may have -- be a little off because of everything that was going on. I would say maybe 45 minutes, an hour it basically burnt off and the vapors or the fog went away."

According to Patrick Dolgos's activity form (ICS 214), at 0740 he approached the IC and recommended relocation of the command post further away. Finally, at 1048, the operations and command post was moved to Borough Hall due to hazardous conditions, according to the Gloucester County communication center's radio log. At no time was the order given by any field commander to wear positive pressure self-contained breathing apparatus while engaged in the emergency response; although, air monitoring showed elevated level of respiratory protection would be required to prevent hazardous exposures to employees.

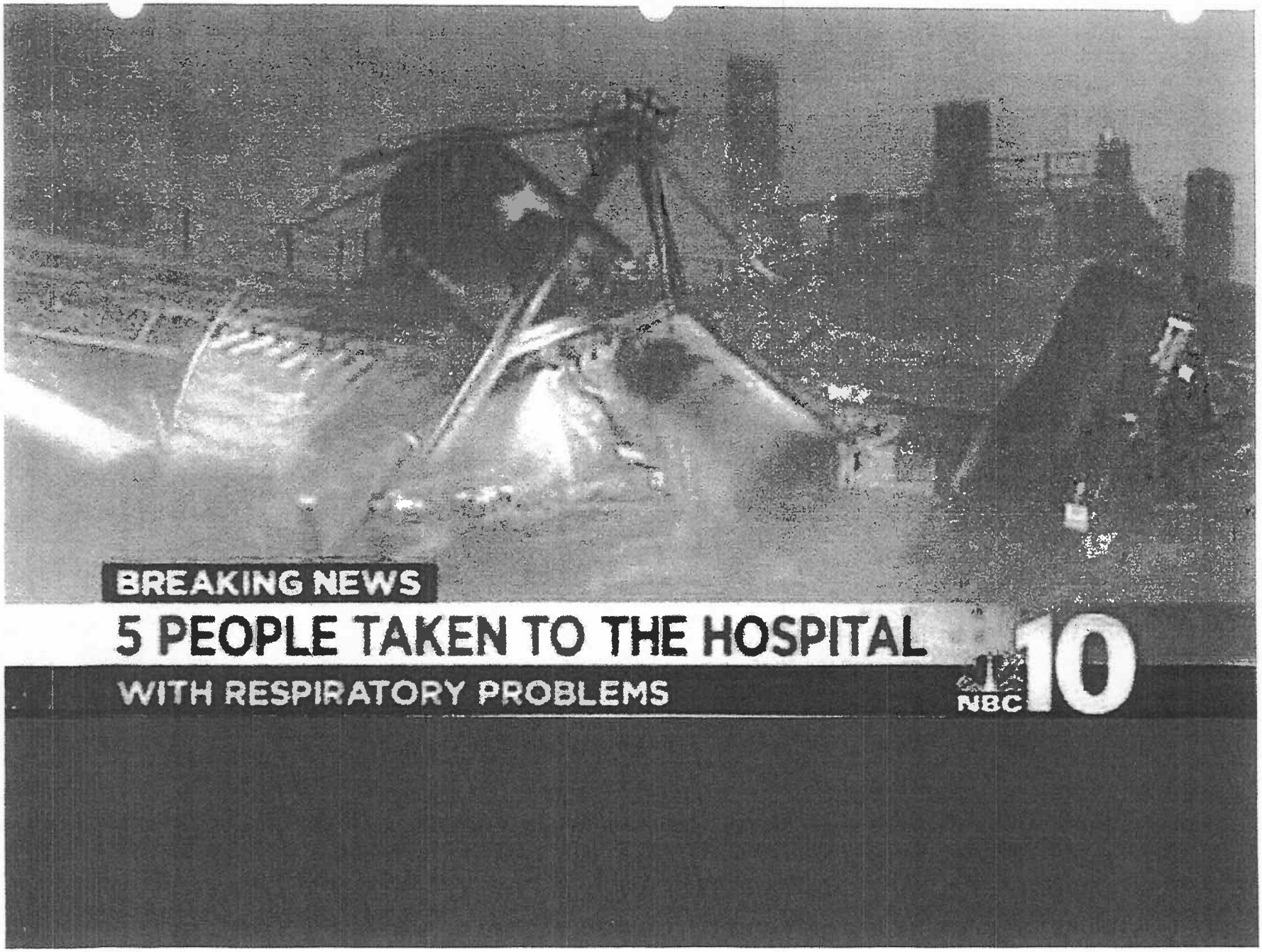
Directly from the "Hot Wash" conducted by the Unified Command on January 18, 2013: The initial first responders had a very challenging situation. Weather conditions were conducive to support fog. Additionally, the vinyl chloride vapors were very "fog-like". Therefore, the responders couldn't tell if there was fog or vapors covering the creek. As time progressed, there were more and more responders from differing agencies arriving. A mindset developed where each of the responders "followed" the lead of the other agency responder and assumed that the area was safe because the other agency was "there". It wasn't until later when it was confirmed that there was a "large" vinyl chloride release which caused a hazardous environment did responders "pull back" their incident zones.

Paulsboro Police Department

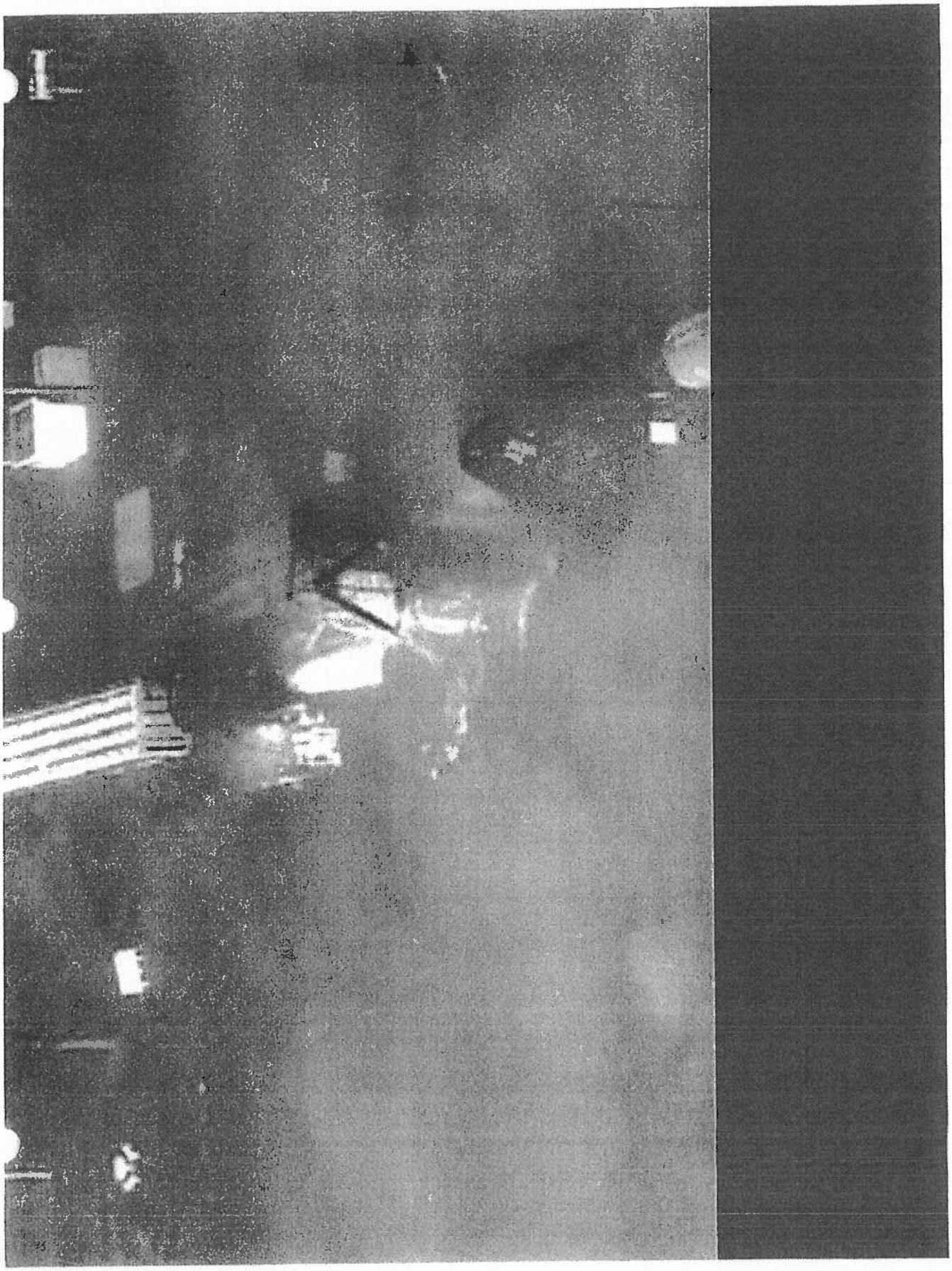
Incident Detail Report

Notes

Text Date	Unit	PFCode	Notes
11/30/12 7:05:08			Update reviewed by dispatcher- Taylor, Kathy R
11/30/12 7:06:59		NZ6108	4 tank cars in water leaking / 3 box cars bridge collapsed req conrail rep to site
11/30/12 7:08:22		NZ6108	1702 on loc r 1701
11/30/12 7:09:27		NZ6108	1701 req cbrne and paulsboro refining hazmat
11/30/12 7:10:21		NZ6108	plack 1086
11/30/12 7:11:05		KT5060	per police at least 1 propane tank leaking
11/30/12 7:11:15		NZ6108	winds light/calm surface winds vertical w/sw
11/30/12 7:13:28		NZ6108	valero contacted for hazmat
11/30/12 7:14:05		NZ6108	r em 17
11/30/12 7:16:50		NZ6108	lumber and plastic in box cars
11/30/12 7:18:31		NZ6108	pat robinson from valero enroute
11/30/12 7:19:01		NZ6108	contact njdot 1701 on locarion
11/30/12 7:20:51		NZ6108	comand post at [redacted] e jefferson
11/30/12 7:22:43		NZ6108	county cbrne notified
11/30/12 7:23:25		NZ6108	Os 1718 1721
11/30/12 7:27:05		NZ6108	contact coast guard / tidal water also info other materials may be in cars
11/30/12 7:28:50		NZ6108	r 5804
11/30/12 7:28:53			Update reviewed by dispatcher- Gallo, Andrew M
11/30/12 7:32:24		NZ6108	paiulsboro refine on loc
11/30/12 7:33:08		NZ6108	notify dist 6 train is his area also
11/30/12 7:35:23		NZ6108	now reporting 5 cars in water
11/30/12 7:41:07		NZ6108	1072 enroute to fire acad w/ 4/ hasmat tech
11/30/12 7:44:12		EH5057	USCG responding
11/30/12 7:44:32		NZ6108	req conrail be contacted for shipping papers
11/30/12 7:48:25		NZ6108	r em6
11/30/12 7:49:06		NZ6108	req alan richer (conrail hazmat) contacted
11/30/12 7:50:35		NZ6108	notify solvay gu utilites and moonstar
11/30/12 7:53:03		NZ6108	per pd sheltering in place


BREAKING NEWS
5 PEOPLE TAKEN TO THE HOSPITAL
WITH RESPIRATORY PROBLEMS
NBC 10

DOH1629



DOH1631

Table 2
Hand-held Real-time Summary – November 30th 13:39 – 23:59

Analyte	Number of Readings	Number of Detections	Highest Concentration
Community			
LEL	77	0	<1.0 %
O2	54	54	21.3 %
Vinyl Chloride 131L	15	12	1.2 ppm
VOC	85	8	0.5 ppm
Evacuated Area			
LEL	21	0	<1.0 %
O2	11	11	21.6 %
Vinyl Chloride 131L	8	7	3 ppm
VOC	25	5	4.5 ppm
Work Area			
LEL	2	0	<1.0 %
O2	2	2	21.6 %
Vinyl Chloride 131L	3	2	0.8 ppm
VOC	4	0	<0.1 ppm

PPM – parts per million

Paulsboro Refinery Hazardous Materials Response Team Mutual Aid

11/30/12 Personnel Involvement & Timestamp of Air Monitoring Data

Paulsboro Refinery Personnel & Involvment: **1) Incident Comment Post** - Patrick Robinson, Calvin Harrje, Ed Bundens **2) Incident Monitoring Team** - Ravi Jarecha, Tom Knopple, Mark McGill, Jason Simon, Bill McCall, Jeremy Harrje, Nick DeCarlo, Alex Jepsen, Adegbenga Badru **3) Paulsboro Refinery (PBR) Monitoring Team** - Kurt Merbach **4) Southwest Monitoring Team** - Mike Licciardello, Scott Reid

The Paulsboro Refinery Hazardous Materials Response Team researched Vinyl Chloride and determined that the Vapor Density is 2.21* (heavier than air) and has an Ionization Potential of 9.99eV*, which could be detected using Photoionization Detectors (PIDs) with a 10.6eV lamp. The Paulsboro Refinery air monitoring instrumentation used during this incident was Industrial Scientific MX6 with 10.6eV PID. The instruments are calibrated monthly and bump tested daily automatically via iNet docking stations. The PIDs are calibrated to 100 ppm Isobutylene; therefore, the Vinyl Chloride PID Response Factor is 1.9 per the attached PID Response Factors table. For example, 100 ppm on a Paulsboro Refinery PID would be 190 ppm of Vinyl Chloride (assuming this is the only material present). The Response Factors were researched after the incident monitoring data was obtained. All results reported below is raw data, the Response Factor is NOT applied.

* *NIOSH Pocket Guide to Chemical Hazards Online Web Version*

Time	Readings (ppm)	Notes	Location
8:33	631	HazMat Team arrive on location, cannot zero equip., obtain high level alarms, informs IC of high levels.	Corner of Commerce & Jefferson
8:34	694		Corner of Commerce & Jefferson
8:37	760		Corner of Commerce & Jefferson
8:40	0	HazMat Teams leaves incident and goes West to zero instruments.	Delaware & Billings
8:44	193	Shortly after zeroing equipment, obtain readings >100 near Heritages	Delaware & Billings
8:48	111		Delaware & Billings
8:55	35	HazMat (Incident Monitoring) Team moves Northwest out of high readings zone	Delaware & Roosevelt
8:55	35		Delaware in front of Paulsboro HS
9:00	4		Delaware & Roosevelt
9:05	0-5		Delaware in front of Paulsboro HS
9:30	11	PBR Monitoring Team	Billingsport Road - ExxonMobil Parking Lot
9:30	0		Billingsport Road - Paulsboro Refinery Main Gate
9:40	0	Southwest Monitoring Team	Billingsport Road & Broad Street - Ames Parking Lot
9:55	10	HazMat Team return to Incident Location	Conrail Shack North Side of RR Tracks, West side of Mantua Creek
10:00	1.2	Southwest Monitoring Team	Billingsport Road & Broad Street - Ames Parking Lot
10:05	7		Billingsport Road & Broad Street - Ames Parking Lot
10:10	9	PBR Monitoring Team	Billingsport Road RR Tracks Overpass
10:15	7	Southwest Monitoring Team	Billingsport Road & Broad Street - Ames Parking Lot
10:21	16		Billingsport Road & Broad Street - Ames Parking Lot
10:30	12		Billingsport Road & Broad Street - Ames Parking Lot
10:43	0	NuStar Monitoring Team**	NuStar Main Gate
10:43	1		NuStar Refinery Peak Reading
10:55	2	Incident Monitoring Team	Broad Street (Rt. 44) Bridge
11:00	0	Southwest Monitoring Team	Broad Street - Gibbstown Fire Dept, Old Wawa, Broad St. School
11:06	0-1	NuStar Monitoring Team**	NuStar Refinery Peak Reading
11:30	0	Incident Monitoring Team	Along Mantua Creek North & South of Incident location
11:35	0	Southwest Monitoring Team	Billingsport Road & Broad Street - Ames Parking Lot
12-14:00	0-50	Incident Monitoring Team	Along Mantua Creek South of Incident location
14:00	Paulsboro Incident Monitoring Team was informed by members of the Gloucester Country CBRN Team to clear the area and discontinued monitoring at incident.		

** *NuStar Monitoring Team data called into Paulsboro Refinery Personnel. Nu Star data not included with data downloads, monitoring instrumentation, method, and exact locations are unknown to Paulsboro Refinery Team personnel.*

East Jefferson Street Bridge Train Derailment 2012
Responder Hotwash
January 18, 2013

tive - or Improvement Both	Observation	Discussion/Comment	Recommendation
	For this incident, participants commented that the initial notification process was a strength. Appropriate local, state and federal agencies were notified about the derailment.	Agencies utilized their notification procedures to make in-agency and external agency notifications.	**First Responder Agencies should:** 1. Periodically check contact numbers for in-agency and external agencies. 2. Periodically conduct in agency and external agency notification drills. 3. Review (and then periodically review) their procedures to ensure that all hazard preparations are considered. Specifically mentioned was contact information for Pipeline Companies may be needed by some agencies.
rovement	The initial assessment reports of the amount of product released conflicted.	Early on in the incident their were some opportunities for improvement as there wasn't a clear consensus of the amount of material that was released. A number of factors contributed to the lack of a consensus of the amount released. These factors depended on the reporting entity; the entity receiving the report; the time that the reports were used to make subsequent notifications; the measurement scale used to report the amount released (total volume capacity of the railcar, gallons, tons, etc.).	**First Responder Agencies should:** 1. Participate in Railroad sponsored derailment training . 2. Review their HAZMAT release notification forms to ensure that appropriate questions are asked of the reporting entity so that accurate assessments can be made.
	There were placards on all four "sides" of the railcars. However, there were challenges in seeing them.	As a result of the derailment and the wreckage, there were railcars on top of each other and railcars or portions of railcars that were submerged underwater in Mantua Creek. Also, safe vantage points provided limited views.	**Railroad Industry:** 1. Consider the placement of additional hazardous material placards on railcars. **Paulsboro FD:** Explore opportunities with Conrail to determine feasibility of obtaining a list of the products being transported through the city or even the products being transported on each train.
rovement	There were numerous Safety Officers (Assistant Safety Officers) for various entities, departments, and agencies.	There were numerous Safety Officers that responded or were assigned by the various entities, departments, and agencies. Each contributed to the specific operation that they were observing. However, they didn't collaborate in overall operational safety meetings. As such, a hotwash participant commented that there was a need for the Safety Officers to meet to facilitate communication between agencies and "contribute" to the IAP.	**First Responder Agencies Should:** 1. Seek opportunities for formal training for their Safety Officer(s). 2. Seek opportunities to exercise with other agencies and entities. Suggest that Safety Officer protocols and procedures are evaluated during the exercises.

DOH16 34

rovement	Initially, there was some confusion as to where the incident work zones should be located. There were various factors that contributed to this issue.	The initial first responders had a very challenging situation. Weather conditions were conducive to support fog. Additionally, the vinyl chloride vapors were very "fog-like". Therefore, the responders couldn't tell if there was fog or vapors covering the creek. As time progressed, there were more and more responders from differing agencies arriving. A mindset developed where each of the responders "followed" the lead of the other agency responder and assumed that the area was safe because the other agency was "there". It wasn't until later when it was confirmed that there was a "large" vinyl chloride release which caused a hazardous environment did responders "pull back" their incident zones.	**Railroad Industry Should:** 1. Provide training to first responders 2. Consider participating in the Sector Delaware Bay Area Committee meetings. (Area Committee contact is Jerry Conrad [redacted] The Area Committee is composed of port stakeholders who have worked together to develop the Sector Delaware Bay Area Contingency Plan (ACP), which is the Area All-Hazard Response Plan.) 3. Ensure that first responders know that each train carries a "Consist" (mini-MSDS) in the locomotive. 4. Ensure that first responders know that the railroad companies maintain a Consist for each train in their Operations Center(s) and all the first responders have to do is call in with some basic train information to get more specific product information on each train. **First Responder Agencies Should:** 1. Participate in any training provided by the railroad companies and/or Federal Railroad Administration. 2. Review the Emergency Response Guidebook to help identify evacuation actions and establish an ICP outside that zone. 3. Review their protocols to ensure that their agency responders don't get exposed or enter into work zones without the proper PPE. 4. Review their agency's response plans for Hazmat incidents and update with lessons learned from this incident. 5. Participate in training and exercises with other agencies. Recommend that "incident control" injects are included in the exercise. 6. Establish a Unified Command, work with law enforcement to limit access to the area.
DOH1635	The liaison mission became an extremely challenging mission. Numerous private and public entities and officials at the local, state and national levels needed information. Identifying these entities, establishing contact procedures, and dealing with an ever expanding group of entities needing information was challenging.	Many private individuals , businesses, and politicians, needed or wanted information. A Coast Guard Officer was assigned as Liaison Officer and worked diligently to identify who he should contact and how. As time progressed there were more and more politicians and entities added to the contact list. Moreover, the politicians wanted tours of the ICP and derailment site and this was a demanding endeavor. It would have been helpful if additional staff familiar with the local and state politicians, and businesses were assigned to the Liaison function.	**Local, State, and Federal First Responder Agencies Should:** 1. Provide staff to support the Liaison function. 2. Consider activating the NJ-DEP Liaison Team. 3. Update their plans or notification procedures to include information about the EPA's Liaison Team.
	Reverse 911 system was utilized to contact residences within Paulsboro.	The Reverse 911 system worked well for the people that were in the areas that officials wanted to get information. However, because of the way that the system pulls phone numbers, there were people that were getting calls to shelter in place that shouldn't have gotten calls. There were also business owners within the area but who lived outside the area who didn't get Reverse 911 calls because their primary residence was outside the area.	**State and Local Officials Should:** 1. Encourage individuals to sign-up for Reverse 911. The initiative must be ongoing as individuals enter and leave the area for numerous reasons. 2. Share Reverse 911 lessons learned with other Counties. 3. Consider activating the NJ-DEP Liaison Team.

ACTIVITY LOG (ICS 214)

1. Incident Name:	2. Operational Period:	
E. Jefferson St. Bridge Derailment 2012	Date From: 11/30/2012 Time From:	Date To: 11/30/2012 Time To:

3. Name:	4. ICS Position:	5. Home Agency (and Unit):
Haz-Mat Branch		

6. Resources Assigned:

Name	ICS Position	Home Agency (and Unit)
Gloucester County Haz-Mat Team CBRNE-1		

7. Activity Log:

Date/Time	Notable Activities
11/30/12 0710 hrs.	Responded to Paulsboro for Incident
11/30/12 0717 hrs.	Spoke to J. Deangelo (GC Haz-Mat Team Leader) via phone. He advised he and other team leader's unavailable for
	response. Advised that I would be Haz-Mat Branch Director if assigned.
11/30/12 0740 hrs.	Arrived on scene. Located ICP, face-to-face with IC. Advised of Haz-Mat response and that we would be staging at the Fire
	Academy. Recommended relocation of CP further away.
11/30/12 0745 hrs.	Interfaced with Paulsboro Refinery Haz-Mat leaders (Chief Robinson / C. Harrje) Advised that they started to meter area
	and that there team was assembling to conduct further metering. Advised IC of Haz-Mat Team Staging.
11/30/12 0755 hrs.	Interfaced with Conrail official on location who showed me the consist of train. Advised that 4 cars derailed contained Vinyl
	Chloride and 1 car contained Denatured Alcohol. They were going to interface with IC
11/30/12 0815 hrs.	Advised Haz-Mat Team in staging at Fire Academy to relocate to Broad St. Shopping Center in Paulsboro.
11/30/12 0830 hrs.	Relocated to Broad St. to meet Gloucester County Haz-Mat Team members. Paulsboro Refinery personnel conducting A.M.
11/30/12 0840 hrs.	Briefed Team of Situation with information gather from the IC and scene. Met with NJSP OEM (Godish)
11/30/12 0900 hrs.	Approached in the parking lot with 18 people c/o Respiratory distress. EMS requested and HM Team members initiated
	Triage and care.
	Staging for Haz-Mat consisted of CBRNE-1, Haz-MAt Techs and Decon enroute (Decon 10)
11/30/12 0900 hrs.	HM Branch Director relocated to Paulsboro FD to meet with other agencies for coordination.
11/30/12 09:20 hrs.	Relocated to ICP at Incident scene. Determined needs and roles. Advised IC of the 18 patients at HM Staging area.
	GCHM Roles: #1- Decon assistance at Parking lot where 18 people c/o Resp. Distress. 2- Assist with Monitoring area of
	incident. 3- Interface with Conrail to determined needs from GCHM.
11/30/12 09:40 hrs.	Tank Car Specialist from GCHM Tech Group requested to Scene.
11/30/12 09:50 hrs.	Multi-agency briefing at Church w/ HM Branch and Tank Car Specialists
11/30/12 10:35 hrs.	Requested to perform Rail Car Assessments with Conrail Reps. and CSX Haz-Mat group to determine needs of Teams.
11/30/12 11:17 hrs.	GCHM members advised lack of metering equipment. Team to pair up with Paulsboro Refinery Haz-Mat.
	Advised that GCHM would be assisting with continued Metering.

8. Prepared by: Name: P. Dolgos Position/Title: Haz-Mat Branch Director Signature: **PII**

ICS 214, Page 1 Date/Time: 11/30/2012

what it was.

Police Department arrived on location. I believe they started a door-to-door, banging as the cloud came out. I did not get involved in that until we got back inside. We went through that looking to make sure that there was no fire, trying to size up the situation, so to speak.

We did that, then we said, look, we need to go to a command post. There was a cloud that came out. We thought it was fog rolling in off the marshes. After -- in hindsight it was not. It was vinyl chloride that was -- it looked like it came off the marshes on the east side of the railroad tracks. I don't know if the wind was blowing from that way but it came off and it rolled up and rolled up onto the ground. After about -- again, my timeline may have -- be a little off because of everything that was going on. I would say maybe 45 minutes, an hour it basically burnt off and the vapors or the fog went away.

We didn't see anything leaking. You couldn't -- I couldn't visibly see a leak and we decided -- after we knew that it was vinyl chloride, we moved back to the church, St. James Church and we had gotten somebody to open it for us so we could take the command post back there and get out from right there in front of it. We were going to go back there and do a briefing and find out what we should do and what the actions that we should take.

I made a communications early on -- to backtrack --

Serious Penalty Calculation - (rev-04/01/2012)
Paulsboro Fire Department
1502 Swedesboro Avenue
Paulsboro, NJ 08066

Inspection: 316851732

Citation 1, Item 3s

Gravity Based Penalty:

Severity:	High	Death, injuries resulting in permanent disability; or chronic, irreversible illnesses
Probablity:	Greater	Likelihood of injury or illness is great
High/Greater	$7,000	

Adjustment Factors:

Size (SF):	0.40	1 to 25 employees
Good Faith (GFF):	1.00	No-reduction given if there is no safety and health program or where a willful violation is found
History (HF):	1.00	No reduction shall be given to employers who have no PEOSH inspection history inthe past five years, or for employers who have been cited by PEOSH for any serious citation other than a High/Greater gravity based penalty in the past five years.

Penalty:

Perdiem Penalty:	**$2,800**
Abatement Date:	6/17/13
Total Accrual (Days):	-53
Accrued Penalty to Date:	**-$148,400**

This penalty was arrived at using the PEOSH Procedure for Enforcement. This gravity based penalty was derived using the following formula:(((GBP x HF) x GFF) x SF) = $Penalty/day

Note Minimum Penalty is $500/day

New Jersey Department of Health and Senior Services
PEOSH Program

OSHA 1B Form (Worksheet)

CSHO	C4835	Inspection #	316851732	Date of Inspection	03/05/2013
Employer Name	Paulsboro Fire Department				
Employee Name	** P I I **			Occupation	Firefighter
Employee Address	** P I I **				
Employee City	** P I I **			Employee State	NJ
Employee Zip	** P I I **	Employee Phone #	** P I I **		
Total # Employees	25	Total Duration	12 hours	Frequency	1 day
Standard	29 CFR 1910.120(q)(3)(v)			# of Instances of the Violation	1
Type of Violation	Serious	Citation #	1	Item #	4s
Abatement Period (# of calendar days or date abatement due)	Abated				

Description of Citation(s)

LOCATION: Facility Wide

DESCRIPTION: The individual in charge of the ICS, Paulsboro Fire Chief Alfonso Giampola, never limited the number of emergency response personnel at the emergency site, limited the number or personnel to areas of potential or actual exposure to the incident or site hazards, and to those who were actively performing emergency operations.

HAZARD: The individual in charge of the ICS did not limit the number of emergency response personnel at the emergency site, in those areas of potential or actual exposure to incident or site hazards, to those who were actively performing emergency operations.

EMPLOYEE EXPOSURE: On November 30, 2012, employees of the Paulsboro Fire Department responded to a train bridge derailment. During the accident, one of six derailed train cars, which contained 176,000-gallons of vinyl chloride, was breached releasing vinyl chloride into the air and water. Vinyl Chloride has a permissible exposure limit (PEL) of 1part per million (ppm) with an action level of 0.5 ppm. Additionally, no employee may be exposed to vinyl chloride at concentrations greater than 5 ppm averaged over any period not exceeding 15 minutes (STEL or short-term exposure limit).

During the emergency response, employees of the Paulsboro Fire Department were stationed and operating within the "hot zone" as identified by the incident commander, Paulsboro Fire Chief Alfonso Giampola. No respiratory protection was used; although, air monitoring for vinyl chloride detected levels above the PEL, STEL and action level. Responding members of the Paulsboro Fire Department began arriving in the "hot zone" at 0723, command had arrived at 0708 and 0719 respectively, and stayed for the duration of the incident. The Paulsboro Refinery

HAZMAT team reported VOC concentrations at the incident scene at a maximum of 760 ppm at 0837 using MX6 iBrid photoionization detectors (PID). According to the manufacturers information, the MX6 iBrid PID has a response factor of 1.9 for vinyl chloride, which could have re-calculated the maximum to 1444 ppm. Additionally, refinery personnel also recorded uncorrected elevated PID levels during the day, for example 54 ppm at 1315 and 17.5 ppm at 1524. An outside contractor, Center for Toxicology and Environmental Health (CTEH), reported numerous results above the PEL using colorimetric detector tubes for vinyl chloride between 1339 and 2359 on November 30, 2012. Urine tests for first responders handled by CTEH had sampling results for thiodiglycolic acid, a metabolite of vinyl chloride, as high as 18 milligrams/gram (mg/g) creatinine, which translates to vinyl chloride air concentrations over 16 ppm. During the interview process, employees describe seeing vapor clouds, frost lines on the bridge and train cars, smelling "sweet" odors and hearing air monitoring personnel announce elevated readings.

EMPLOYER KNOWLEDGE: On November 30, 2012, a 911 call at 0706 stated 4 tank cars were in the water and leaking after a bridge collapsed along the Mantua Creek in Paulsboro, New Jersey. A follow-up radio transmission at 0710 identified the placard #1086, which is for vinyl chloride. The incident commander, Fire Chief Alfonso Giampola, responded to the scene and was on location at 0719. Upon arrival at the incident scene, reference material was obtained such as the DOT Emergency Response Guidebook, which states for any large spill, an initial downwind evacuation for at least 800 meters should be considered. Additionally, the MSDS for vinyl chloride was obtained by the incident commander from the ATSDR website, which lists a permissible exposure limit (PEL) of 1 part per million (ppm).

According to Patrick Dolgos's activity form (ICS 214), at 0740 he approached the incident commaner and recommended relocation of the command post further away. Finally, at 1048, the operations and command post was moved to Borough Hall due to hazardous conditions, according to the Gloucester County communication center's radio log. The operations and command post was eventually moved to the Gloucester Fire Academy in neighboring Clarksboro, New Jersey.

According to the Borough of Paulsboro's Emergency Response Plan, Annex H for Hazardous Materials, for incidents requiring the establishment of site control measures, the incident commander will limit and control the number of responders entering the "hot zone". During an interview, Chief Giampola stated "he stopped counting at 65 for the number of police agencies that had mobilized officers to the incident scene." "All alone, he was just trying to manage the emergency fire personnel that had responded from Paulsboro, Westville, National Park, West Deptford, Gloucestor County CBRNE, Gibbstown, Salem, etc…" No order to limit the amount of personnel in the "hot zone" was issued during the intial response and no respiratory protection was used; although, air monitoring for vinyl chloride detected levels above the PEL, STEL and action level.

Directly from the "Hot Wash" conducted by the Unified Command on January 18, 2013: The liaison mission became an extremely challenging mission. Numerous private and public entities and officials at the local, state and national levels needed information. Identifying these entities, establishing contact procedures, and dealing with an ever expanding group of entities needing information was challenging.

ATSDR Agency for Toxic Substances & Disease Registry

Medical Management Guidelines for Vinyl Chloride

(C_2H_3Cl)

CAS# 75-01-4
UN# 1086

PDF Version, 54 KB

Synonyms include chloroethene, chloroethylene, 1-chloroethylene, ethylene monochloride, monochloroethylene, monovinyl chloride, MVC, VC, VCM, and vinyl chloride monomer.

- Persons exposed only to vinyl chloride gas pose no risk of secondary contamination. Persons whose clothing or skin is contaminated with pressurized liquid vinyl chloride can secondarily contaminate rescuers by direct contact or through off-gassing of vapor.
- At all ambient temperatures, vinyl chloride is an extremely flammable and potentially explosive gas that is heavier than air. It has a mild, sweet odor, but odor is not an adequate warning of hazardous concentrations.
- Inhalation is the major route of vinyl chloride exposure; absorption is rapid and nearly complete. Gastrointestinal absorption is unlikely as vinyl chloride is a gas at room temperature. Dermal absorption is negligible.

General Information

Description

At room temperature, vinyl chloride is a colorless, highly flammable, potentially explosive gas. It has a faint sweet odor. The odor threshold for vinyl chloride is about 3,000 ppm in air, depending on the individual. When confined under high pressure in special containers, vinyl chloride exists in a liquefied state. It is shipped and handled this way. When burned or heated to a high enough temperature, vinyl chloride decomposes to hydrogen chloride, carbon monoxide, carbon dioxide, and traces of phosgene. Vinyl chloride should be stored in a cool, dry, well ventilated location, separate from oxidizing materials and accelerants. Phenol is often added as a stabilizer.

Routes of Exposure

Inhalation

Inhalation is the primary route of exposure, and vinyl chloride is readily absorbed from the lungs. Its odor threshold is too high to provide an adequate warning of hazardous concentrations. The odor of vinyl chloride becomes detectable at around 3,000 ppm and the OSHA PEL is 1 ppm (8-hour TWA). Therefore, workers can be overexposed to vinyl chloride without being aware of its presence. A 5-minute exposure to airborne concentrations of 8,000 ppm can cause dizziness. As airborne levels increase to 20,000 ppm, effects can include drowsiness, loss of coordination, visual and auditory abnormalities, disorientation, nausea, headache, and burning or tingling of the extremities. Exposure to higher concentrations of vinyl chloride for longer durations can cause death, presumably due to central nervous system

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- **EXTREMELY FLAMMABLE.**
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Silane will ignite spontaneously in air.
- Those substances designated with a **(P)** may polymerize explosively when heated or involved in a fire.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH

- Vapors may cause dizziness or asphyxiation without warning.
- Some may be toxic if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

PUBLIC SAFETY

- **CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

EMERGENCY RESPONSE

FIRE

- DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.

Small Fire

- Dry chemical or CO_2.

Large Fire

- Water spray or fog.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

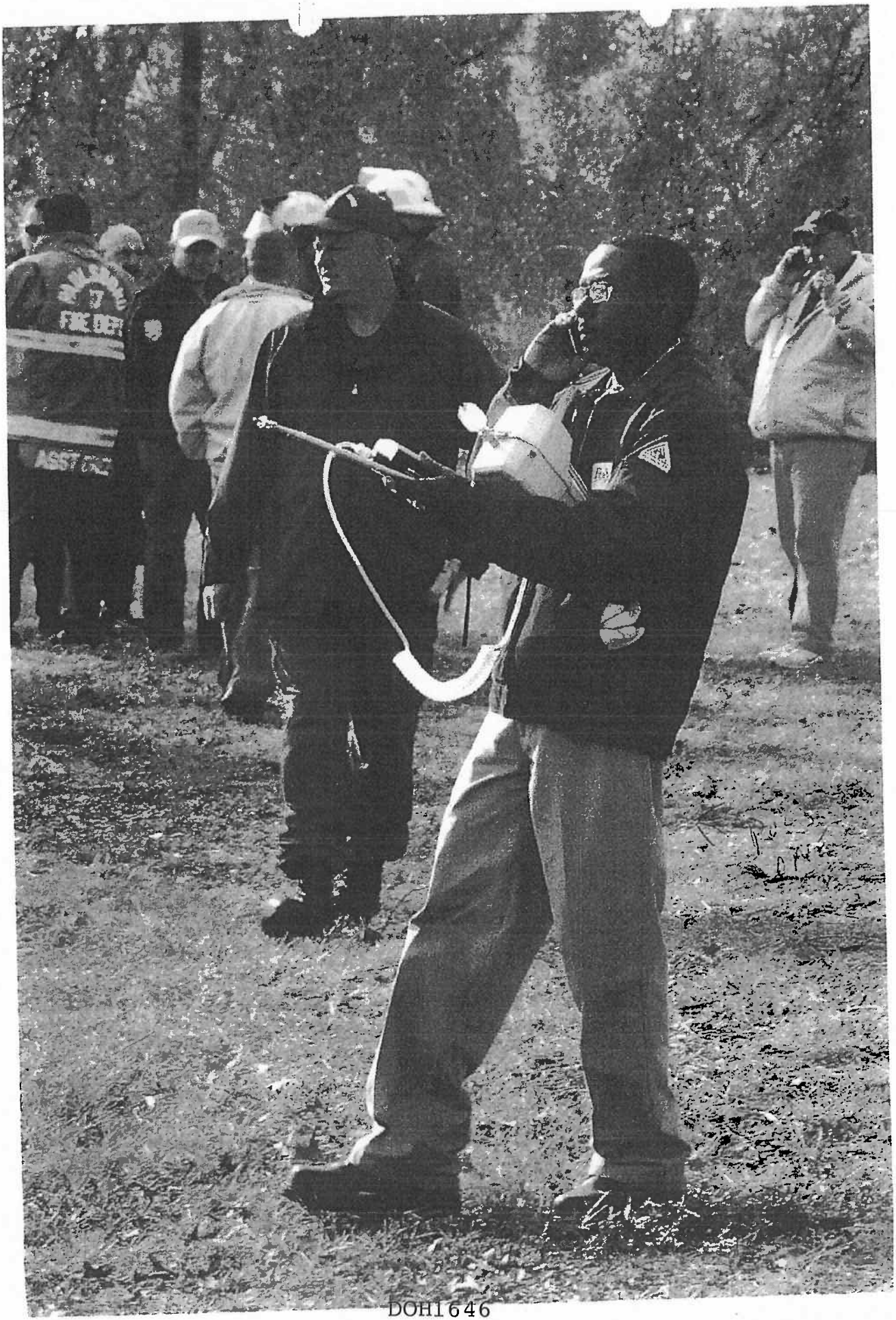
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Stop leak if you can do it without risk.
- Do not touch or walk through spilled material.
- Do not direct water at spill or source of leak.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Isolate area until gas has dispersed.

FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

DOH1644

Alan Eckert



Command Post
HazMat
Compiled and prepared by Thomas J. O'Connell

BOROUGH OF PAULSBORO

ADMINISTRATION BUILDING, 1211 DELAWARE STREET
PAULSBORO, NEW JERSEY 08066
(856) 423-1500

May 1, 2006

Thomas Butts
Gloucester County
Office of Emergency Management
1200 North Delsea Drive
Clayton, NJ 08312

Re: Paulsboro's Emergency Operations Plan

Dear Mr. Butts:

Enclosed please find the above referenced plan and all signatures for your approval.

Mayor and Council have approved the plan by adopting a Resolution, which is also enclosed, entitled "Resolution No. 83.06: Resolution of the Borough of Paulsboro Recertifying its Emergency Management Plan". This Resolution was adopted at the Work Session Meeting of Mayor and Council held on April 18, 2006.

If you have any questions, comments or concerns please feel free to contact myself or Glenn Roemmich, Emergency Management Coordinator.

Very truly yours,

PII

Kathy A. VanScoy, RMC/CMC
Borough Clerk

Enc.

Cc: Mayor and Council
John S. Salvatore, Administrator
Glenn Roemmich, Emergency Management Coordinator

East Jefferson Street Bridge Train Derailment 2012
Responder Hotwash
January 18, 2013

tive - or Improvement Both	Observation	Discussion/Comment	Recommendation
	For this incident, participants commented that the initial notification process was a strength. Appropriate local, state and federal agencies were notified about the derailment.	Agencies utilized their notification procedures to make in-agency and external agency notifications.	First Responder Agencies should: 1. Periodically check contact numbers for in-agency and external agencies. 2. Periodically conduct in agency and external agency notification drills. 3. Review (and then periodically review) their procedures to ensure that all hazard preparations are considered. Specifically mentioned was contact information for Pipeline Companies may be needed by some agencies.
rovement	The initial assessment reports of the amount of product released conflicted.	Early on in the incident their were some opportunities for improvement as there wasn't a clear consensus of the amount of material that was released. A number of factors contributed to the lack of a consensus of the amount released. These factors depended on the reporting entity; the entity receiving the report; the time that the reports were used to make subsequent notifications; the measurement scale used to report the amount released (total volume capacity of the railcar, gallons, tons, etc.).	First Responder Agencies should: 1. Participate in Railroad sponsored derailment training. 2. Review their HAZMAT release notification forms to ensure that appropriate questions are asked of the reporting entity so that accurate assessments can be made.
	There were placards on all four "sides" of the railcars. However, there were challenges in seeing them.	As a result of the derailment and the wreckage, there were railcars on top of each other and railcars or portions of railcars that were submerged underwater in Mantua Creek. Also, safe vantage points provided limited views.	Railroad Industry: 1. Consider the placement of additional hazardous material placards on railcars. Paulsboro FD: Explore opportunities with Conrail to determine feasibility of obtaining a list of the products being transported through the city or even the products being transported on each train.
rovement	There were numerous Safety Officers (Assistant Safety Officers) for various entities, departments, and agencies.	There were numerous Safety Officers that responded or were assigned by the various entities, departments, and agencies. Each contributed to the specific operation that they were observing. However, they didn't collaborate in overall operational safety meetings. As such, a hotwash participant commented that there was a need for the Safety Officers to meet to facilitate communication between agencies and "contribute" to the IAP.	First Responder Agencies Should: 1. Seek opportunities for formal training for their Safety Officer(s). 2. Seek opportunities to exercise with other agencies and entities. Suggest that Safety Officer protocols and procedures are evaluated during the exercises.

DOH1650

ovement	Initially, there was some confusion as to where the incident work zones should be located. There were various factors that contributed to this issue.	The initial first responders had a very challenging situation. Weather conditions were conducive to support fog. Additionally, the vinyl chloride vapors were very "fog-like". Therefore, the responders couldn't tell if there was fog or vapors covering the creek. As time progressed, there were more and more responders from differing agencies arriving. A mindset developed where each of the responders "followed" the lead of the other agency responder and assumed that the area was safe because the other agency was "there". It wasn't until later when it was confirmed that there was a "large" vinyl chloride release which caused a hazardous environment did responders "pull back" their incident zones.	**Railroad Industry Should:** 1. Provide training to first responders. 2. Consider participating in the Sector Delaware Bay Area Committee meetings. (Area Committee contact is Jerry Conrad [redacted] The Area Committee is composed of port stakeholders who have worked together to develop the Sector Delaware Bay Area Contingency Plan (ACP), which is the Area All Hazard Response Plan.) 3. Ensure that first responders know that each train carries a "Consist" (mini-MSDS) in the locomotive. 4. Ensure that first responders know that the railroad companies maintain a Consist for each train in their Operations Center(s) and all the first responders have to do is call in with some basic train information to get more specific product information on each train. **First Responder Agencies Should:** 1. Participate in any training provided by the railroad companies and/or Federal Railroad Administration. 2. Review the Emergency Response Guidebook to help identify evacuation actions and establish an ICP outside that zone. 3. Review their protocols to ensure that their agency responders don't get exposed or enter into work zones without the proper PPE. 4. Review their agency's response plans for Hazmat incidents and update with lessons learned from this incident. 5. Participate in training and exercises with other agencies. Recommend that "incident control" injects ar included in the exercise. 6. Establish a Unified Command, work with law enforcement to limit access to the area.
	The liaison mission became an extremely challenging mission. Numerous private and public entities and officials at the local, state and national levels needed information. Identifying these entities, establishing contact procedures, and dealing with an ever expanding group of entities needing information was challenging.	Many private individuals , businesses, and politicians, needed or wanted information. A Coast Guard Officer was assigned as Liaison Officer and worked diligently to identify who he should contact and how. As time progressed there were more and more politicians and entities added to the contact list. Moreover, the politicians wanted tours of the ICP and derailment site and this was a demanding endeavor. It would have been helpful if additional staff familiar with the local and state politicians, and businesses were assigned to the Liaison function.	**Local, State, and Federal First Responder Agencies Should:** 1. Provide staff to support the Liaison function. 2. Consider activating the NJ-DEP Liaison Team. 3. Update their plans or notification procedures to include information about the EPA's Liaison Team.
	Reverse 911 system was utilized to contact residences within Paulsboro.	The Reverse 911 system worked well for the people that were in the areas that officials wanted to get information. However, because of the way that the system pulls phone numbers, there were people that were getting calls to shelter in place that shouldn't have gotten calls. There were also business owners within the area but who lived outside the area who didn't get Reverse 911 calls because their primary residence was outside the area.	**State and Local Officials Should:** 1. Encourage individuals to sign-up for Reverse 911. The initiative must be ongoing as individuals enter and leave the area for numerous reasons. 2. Share Reverse 911 lessons learned with other Counties. 3. Consider activating the NJ-DEP Liaison Team.

Serious Penalty Calculation - (rev-04/01/2012)
Paulsboro Fire Department
1502 Swedesboro Avenue
Paulsboro, NJ 08066

Inspection: 316851732

Citation 1, Item 4s

Gravity Based Penalty:

Severity:	High	Death, injuries resulting in permanent disability; or chronic, irreversible illnesses
Probablity:	Greater	Likelihood of injury or illness is great
High/Greater	$7,000	

Adjustment Factors:

Size (SF):	0.40	1 to 25 employees
Good Faith (GFF):	1.00	No-reduction given if there is no safety and health program or where a willful violation is found
History (HF):	1.00	No reduction shall be given to employers who have no PEOSH inspection history inthe past five years, or for employers who have been cited by PEOSH for any serious citation other than a High/Greater gravity based penalty in the past five years.

Penalty:

Perdiem Penalty:	**$2,800**
Abatement Date:	6/17/13
Total Accrual (Days):	-53
Accrued Penalty to Date:	**-$148,400**

This penalty was arrived at using the PEOSH Procedure for Enforcement. This gravity based penalty was derived using the following formula:(((GBP x HF) x GFF) x SF) = $Penalty/day

Note Minimum Penalty is $500/day

New Jersey Department of Health and Senior Services
PEOSH Program

OSHA 1B Form (Worksheet)

CSHO	C4835	Inspection #	316851732	Date of Inspection	03/05/2013
Employer Name	Paulsboro Fire Department				
Employee Name	** P I I **			Occupation	Firefighter
Employee Address	** P I I **				
Employee City	** P I I **			Employee State	NJ
Employee Zip	** P I I **	Employee Phone #	** P I I **		
Total # Employees	25	Total Duration	12 hours	Frequency	1 day
Standard	29 CFR 1910.120(q)(3)(vii)	# of Instances of the Violation	1		
Type of Violation	Serious	Citation #	1	Item #	5s	Abatement Period (# of calendar days or date abatement due)	Abated

Description of Citation(s)

LOCATION: Facility Wide

DESCRIPTION: During the November 30, 2012, Paulsboro train derailment, the individual in charge of the ICS, Paulsboro Fire Chief Alfonso Giampola, did not designate a safety officer, who is knowledgeable in the operations being implemented at the emergency response site, with specific responsibility to identify and evaluate hazards and to provide direction with respect to the safety of operations for the emergency at hand.

HAZARD: The individual in charge of the ICS did not designate a safety officer, who is knowledgeable in the operations being implemented at the emergency response site, with specific responsibility to identify and evaluate hazards and to provide direction with respect to the safety of operations for the emergency at hand.

EMPLOYEE EXPOSURE: On November 30, 2012, employees of the Paulsboro Fire Department responded to a train bridge derailment. During the accident, one of six derailed train cars, which contained 176,000-gallons of vinyl chloride, was breached releasing vinyl chloride into the air and water. Vinyl Chloride has a permissible exposure limit (PEL) of 1part per million (ppm) with an action level of 0.5 ppm. Additionally, no employee may be exposed to vinyl chloride at concentrations greater than 5 ppm averaged over any period not exceeding 15 minutes (STEL or short-term exposure limit). Responding members of the Paulsboro Fire Department began arriving in the "hot zone" at 0723, command had arrived at 0708 and 0719 respectively, and stayed for the duration of the incident. No respiratory protection was used; although, air monitoring for vinyl chloride detected levels above the PEL, STEL and action level. During the interview process, employees describe seeing vapor clouds, frost lines on the bridge and train cars, smelling "sweet" odors and hearing air monitoring personnel announce elevated readings.

EMPLOYER KNOWLEDGE: On November 30, 2012, a 911 call at 0706 stated 4 tank cars were in the water and leaking after a bridge collapsed along the Mantua Creek in Paulsboro, New Jersey. A follow-up radio transmission at 0710 identified the placard #1086, which is for vinyl chloride. The incident commander responded to the scene and was on location at 0719. Upon arrival at the incident scene, reference material was obtained such as the DOT Emergency Response Guidebook, which states for any large spill, an initial downwind evacuation for at least 800 meters should be considered. Additionally, the MSDS for vinyl chloride was obtained by the incident commander from the ATSDR website, which lists a permissible exposure limit (PEL) of 1 part per million (ppm).

The Policies, Procedures and Standard Operating Guidelines Manual for the Paulsboro Fire Department, SOP #602, titled *Establishing Command & NIMS* states command is responsible to ensure that all of the needed components of the Incident Management System are either staffed or the responsibilities are covered. According to the Borough of Paulsboro's Emergency Response Plan, Annex H for Hazardous Materials, the incident commander will be responsible for coordinating safety monitoring and decontamination. However, the incident must appoint a safety officer and may not act in both capacities except for in certain small responses.

Directly from the "Hot Wash" conducted by the Unified Command on January 18, 2013: There were numerous Safety Officers that responded or were assigned by the various entities, departments, and agencies. Each contributed to the specific operation that they were observing. However, they didn't collaborate in overall operational safety meetings. As such, a hotwash participant commented that there was a need for the Safety Officers to meet to facilitate communication between agencies and "contribute" to the IAP. A Safety Officer for the fire branch service did not exist until Robert Hill, Director of the Gloucester County Fire Academy, was appointed safety officer on December 4, 2012. During an interview with Director Hill, he stated that "he gave safety briefings each morning or operational period, he did indeed have the authority to stop any unsafe practices or situation, and that he was personnally requested by Chief Giampola.

ORGANIZATION ASSIGNMENT LIST

1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
E. Jefferson Bridge Damage	1 DEC 2017	1000 HRS

POSITION NAME

5. INCIDENT COMMANDER AND STAFF

INCIDENT COMMANDER PAULSBO	A. GIAMPOLA
DEPUTY	
SAFTEY OFFICER	
INFORMATION OFFICER	
LIAISON OFFICER	

6. AGENCY REPRESENTATIVES

AGENCY	NAME
GCOEM	JACK DEANGELO

7. PLANNING SECTION

CHIEF	
DEPUTY	
RESOURCES UNIT	
SITUATION UNIT	
DOCUMENTATION UNIT	
DEMOBILIZATION UNIT	
TECHNICAL SPECIALISTS	

8. LOGISTICS SECTION

CHIEF	JACK DEANGELO
DEPUTY	
a. SUPPORT BRANCH	
DIRECTOR	
SUPPLY UNIT	
FACILITIES UNIT	
GROUND SUPPORT UNIT	
b. SERVICE BRANCH	
DIRECTOR	
COMMUNICATIONS UNIT	
MEDICAL UNIT	
FOOD UNIT	

4. OPERATIONAL PERIOD (DATE/TIME)

9. OPERATIONS SECTION

CHIEF	GLENN ROEMICH
DEPUTY	
a. BRANCH I- DIVISION/GROUPS	
BRANCH DIRECTOR HAZMAT	JAY JONES
DEPUTY	
DIVISION/GROUP	
DIVISION/GROUP	
DIVISION/GROUP	
DIVISION/GROUP	
DIVISION/GROUP	
b. BRANCH II- DIVISION/GROUPS	
BRANCH DIRECTOR	
DEPUTY	
DIVISION/GROUP	
DIVISION/GROUP	
DIVISION/GROUP	
DIVISION/GROUP	
DIVISION/GROUP	
c. BRANCH III- DIVISION/GROUPS	
BRANCH DIRECTOR	
DEPUTY	
DIVISION/GROUP	
DIVISION/GROUP	
DIVISION/GROUP	
DIVISION/GROUP	
DIVISION/GROUP	
d. AIR OPERATIONS BRANCH	FIRE COORD BRANCH
~~AIR OPERATIONS~~ BR. DIR.	ED JOHNSON
AIR TACTICAL GROUP SUP.	
AIR SUPPORT GROUP SUP.	
HELICOPTER COORDINATOR	
AIR TANKER/FIXED WING CRD.	

10. FINANCE/ADMINISTRATION SECTION

CHIEF	
DEPUTY	
TIME UNIT	
PROCUREMENT UNIT	
COMPENSATION/CLAIMS UNIT	
COST UNIT	

PREPARED BY(RESOURCES UNIT)

NFES 1327

East Jefferson Street Bridge Train Derailment 2012
Responder Hotwash
January 18, 2013

tive - r Improvement Both	Observation	Discussion/Comment	Recommendation
	For this incident, participants commented that the initial notification process was a strength. Appropriate local, state and federal agencies were notified about the derailment.	Agencies utilize their notification procedures (ma[illegible] and external agency notifications.	First Responder Agencies should: 1. Periodically check contact numbers for in-agency and external agencies. 2. Periodically conduct in-agency and external agency notification drills. 3. Review (and then periodically review) their procedures to ensure that all hazard preparations are considered. Specifically mentioned was contact information for Pipeline Companies may be needed by some agencies.
rovement	The initial assessment reports of the amount of product released conflicted.	Early on in the incident there were some opportunities for improvement as there wasn't a clear consensus of the amount of material that was released. A number of factors contributed to the lack of a consensus of the amount released. These factors depended on the reporting entity; the entity receiving the report; the time that the reports were used to make subsequent notifications; the measurement scale used to report the amount released (total volume capacity of the railcar, gallons, tons, etc.).	First Responder Agencies should: 1. Participate in Railroad sponsored derailment training . 2. Review their HAZMAT release notification forms to ensure that appropriate questions are asked of the reporting entity so that accurate assessments can be made.
	There were placards on all four "sides" of the railcars. However, there were challenges in seeing them.	As a result of the derailment and the wreckage, there were railcars on top of each other and railcars or portions of railcars that were submerged underwater in Mantua Creek. Also, safe vantage points provided limited views.	**Railroad Industry:** 1. Consider the placement of additional hazardous material placards on railcars. **Paulsboro FD:** Explore opportunities with Conrail to determine feasibility of obtaining a list of the products being transported through the city or even the products being transported on each train.
rovement	There were numerous Safety Officers (Assistant Safety Officers) for various entities, departments, and agencies.	There were numerous Safety Officers that responded or were assigned by the various entities, departments, and agencies. Each contributed to the specific operation that they were observing. However, they didn't collaborate in overall operational safety meetings. As such, a hotwash participant commented that there was a need for the Safety Officers to meet to facilitate communication between agencies and "contribute" to the IAP.	First Responder Agencies Should: 1. Seek opportunities for formal training for their Safety Officer(s). 2. Seek opportunities to exercise with other agencies and entities. Suggest that Safety Officer protocols and procedures are evaluated during the exercises.

DOH1656

.. Incident Name: EAST JEFFERSON I BRIDGE DEMOLITION	2. Operational Period: Date From: 12.4.12 Time From: 1000	Date To: 12.4.12 Time To: 2000
3. Name: ROBERT V HILL SR	4. ICS Position: HEALTH & SAFETY FIRE BRANCH	5. Home Agency (and Unit): GLOUCESTER COUNTY COLLEGE

6. Resources Assigned:

Name	ICS Position	Home Agency (and Unit)
1 HOUR		

7. Activity Log:

Date/Time	Notable Activities
12.4.12 1000	CHECK-IN AND ATTEND BRIEFING
12-4-12 1030	REVIEW "DRAFT" SAFETY PLAN
12-4-12 1430	OBSERVE VICINITY OF INCIDENT. BRIEF FIREFIGHTERS

DOH1657

Safety Briefing for all Fire Branch Apparatus Field Deployment
Developed 2012-12-4 @ 1330 Hours

This Safety Briefing is to be given to all Fire Branch personnel as they are deployed to the scene. This will typically be given by the Deputy Operations Section person.

Key Points to Cover:

- Your safety, the team safety and incident safety are the priority.
- Shall check in at the ICP at least 15 minutes prior to start of rotation.
- Shall receive a Safety Briefing (review of this document).
- Shall have completed the ICS 214 Activity Log.

Need to stress with on scene FD personnel two issues:

1. **Should there be an exposure the urine test is voluntary but understand that it must be obtained within 24 hours for the most effective results.**
2. **Should there be an evacuation from the scene then notify County Communications to ensure that the PD is notified so they can evacuate too.**

- No rings, jewelry, earrings, etc.
- Wear your PPE as appropriate; should have gloves at all times
- Do not walk and talk
- Use cell phones at a safe location; definitely not in the hot zone.
- No smoking unless in a safe area
- Wear seat belts
- Must use spotter when backing
- Be aware of pinch points
- Make your PPE needs known
- Avoid dehydration issues
- Everyone must look out for each other
- Be courteous when being corrected for PPE/safety deficiencies
- Area will be cleared of unnecessary personnel when transfer begins
- Vinyl chloride safety
    - Flammable vapor
    - Stay upwind
    - Evacuation signal is 3 short blasts followed by one long one by the fire trucks. Go to _____.
- Respiratory protection is important and may be needed if readings elevate. Constant monitoring is being completed by CTH and EPA. Any monitoring issues contact Kyle (CTH) 501-366-2698
    - OSHA protocols must be followed to include:
        - Medical surveillance including an annual Physicians Examining Opinion
        - Fit testing for the particular respirator
        - No facial hair that would interfere with the respirator seal
    - PEOSH
        - Must be New Jersey Firefighter 1 credentialed
    - 1PPM is the threshold for action

1. **Purpose and Scope**
   1.1 The Paulsboro Fire Department adopts the Incident Management System as prescribed by N.J.A.C. 5:75-2. It is the Department's policy and State Law to utilize The Incident Management System as outlined in this guideline and the Gloucester County Incident Management Plan, at every incident. These concepts are covered as part of the required Incident Command System and National Incident Management System (NIMS) courses and it is not the intent of this guideline to revisit all of the concepts but rather to cover the main components.

2. **Establishing Command**
   2.1 The first arriving officer, or senior member if an officer is not present, shall report a size up, initiate accountability, and notify the Gloucester County Communications Center by radio that they have assumed command. Command name should usually be determined by the location name whether that be the address or business name.
   2.2 Should a more senior officer arrive at the scene then they should be briefed on the situation and may either support the existing command structure or assume the Command function. The Gloucester County Emergency Response Center shall be notified of the later situation.
   2.3 Command is responsible to ensure that all of the needed components of the Incident Management System are either staffed or the responsibilities are covered. Naturally, Command is always established first followed by staffing the Crew, Group, Division and other operational assignments. The span of control must always be maintained and, while the initial supervisory responsibilities are being conducted by Command, they may be staffed by individuals once adequate personnel are on location (e.g. Command Staff, Accountability, Section Chiefs, Branch Directors, Divisional/Group Supervisors, Strike Team/Task Force/Unit leaders, General Staff).

3. **Scene Designation**
   3.1 Divisions
      3.1.1 'Division A' will be the address side or front of the building and the nomenclature will work in a clockwise fashion around the structure. 'Division B' will be the left side, 'Division C' is the rear of the structure while 'Division C' is the right side.
   3.2 Floors
      3.2.1 'Division 1' is the first floor, 'Division 2' is the second floor and 'Division 3' is the third floor, etc. The 'Basement' and 'Roof' terms are self explanatory.

   3.3 Groups and Crews will be used to address task oriented functions.

Serious Penalty Calculation - (rev-04/01/2012)
Paulsboro Fire Department
1502 Swedesboro Avenue
Paulsboro, NJ 08066

Inspection: 316851732

Citation 1, Item 5s

Gravity Based Penalty:

Severity:	High	Death, injuries resulting in permanent disability; or chronic, irreversible illnesses
Probablity:	Greater	Likelihood of injury or illness is great
High/Greater	$7,000	

Adjustment Factors:

Size (SF):	0.40	1 to 25 employees
Good Faith (GFF):	1.00	No-reduction given if there is no safety and health program or where a willful violation is found
History (HF):	1.00	No reduction shall be given to employers who have no PEOSH inspection history inthe past five years, or for employers who have been cited by PEOSH for any serious citation other than a High/Greater gravity based penalty in the past five years.

Penalty:

Perdiem Penalty:	**$2,800**
Abatement Date:	6/17/13
Total Accrual (Days):	-53
Accrued Penalty to Date:	**-$148,400**

This penalty was arrived at using the PEOSH Procedure for Enforcement. This gravity based penalty was derived using the following formula:(((GBP x HF) x GFF) x SF) = $Penalty/day

Note Minimum Penalty is $500/day

New Jersey Department of Health and Senior Services
PEOSH Program

OSHA 1B Form (Worksheet)

CSHO	C4835	Inspection #	316851732	Date of Inspection	03/05/2013
Employer Name	Paulsboro Fire Department				
Employee Name	** P I I **			Occupation	Firefighter
Employee Address	** P I I **				
Employee City	** P I I **			Employee State	NJ
Employee Zip	** P I I **	Employee Phone #	** P I I **		
Total # Employees	25	Total Duration	4 hours per day	Frequency	3 days
Standard	29 CFR 1910.120(q)(1)			# of Instances of the Violation	1
Type of Violation	Serious	Citation #	1	Item #	6s
Abatement Period (# of calendar days or date abatement due)	30 Days				

Description of Citation(s)

LOCATION: Facility Wide

DESCRIPTION: A written Emergency Response Plan (ERP) that was developed and implemented to handle anticipated emergencies prior to the commencement of emergency response operations was not readily available for review.

HAZARD: The employer did not develop and implement a written emergency response plan which included the requirements in 29 CFR 1910.120

EMPLOYEE EXPOSURE: On November 30, 2012, employees of the Paulsboro Fire Department responded to a train bridge derailment. During the accident, one of six derailed train cars, which contained 176,000-gallons of vinyl chloride, was breached releasing vinyl chloride into the air and water. Vinyl Chloride has a permissible exposure limit (PEL) of 1part per million (ppm) with an action level of 0.5 ppm. Additionally, no employee may be exposed to vinyl chloride at concentrations greater than 5 ppm averaged over any period not exceeding 15 minutes (STEL or short-term exposure limit). Responding members of the Paulsboro Fire Department began arriving in the "hot zone" at 0723, command had arrived at 0708 and 0719 respectively, and stayed for the duration of the incident. No respiratory protection was used; although, air monitoring for vinyl chloride detected levels above the PEL, STEL and action level. During the interview process, employees describe seeing vapor clouds, frost lines on the bridge and train cars, smelling "sweet" odors and hearing air monitoring personnel announce elevated readings.

EMPLOYER KNOWLEDGE: On November 30, 2012, a 911 call at 0706 stated 4 tank cars were in the water and leaking after a bridge collapsed along the Mantua Creek in Paulsboro, New Jersey. A follow-up radio transmission at 0710 identified the placard #1086, which is for vinyl chloride. The incident commander, Paulsboro

BOROUGH OF PAULSBORO

ADMINISTRATION BUILDING, 1211 DELAWARE STREET
PAULSBORO, NEW JERSEY 08066
(856) 423-1500

May 1, 2006

Thomas Butts
Gloucester County
Office of Emergency Management
1200 North Delsea Drive
Clayton, NJ 08312

Re: Paulsboro's Emergency Operations Plan

Dear Mr. Butts:

Enclosed please find the above referenced plan and all signatures for your approval.

Mayor and Council have approved the plan by adopting a Resolution, which is also enclosed, entitled "Resolution No. 83.06: Resolution of the Borough of Paulsboro Recertifying its Emergency Management Plan". This Resolution was adopted at the Work Session Meeting of Mayor and Council held on April 18, 2006.

If you have any questions, comments or concerns please feel free to contact myself or Glenn Roemmich, Emergency Management Coordinator.

Very truly yours,

** PII **

Kathy A. VanScoy, RMC/CMC
Borough Clerk

Enc.

Cc: Mayor and Council
John S. Salvatore, Administrator
Glenn Roemmich, Emergency Management Coordinator

PAULSBORO FIRE DEPARTMENT DISTRICT PAULSBORO 17	Policies, Procedures and Standard Operating Guidelines Manual Establishing Command & NIMS	Page 1 of 3 Document ID: SOG#602 Issue No: 1 Issued Reviewed Approved by: District Fire Chief Executive Committee

1. **Purpose and Scope**

1.1 The Paulsboro Fire Department adopts the Incident Management System as prescribed by N.J.A.C. 5:75-2. It is the Department's policy and State Law to utilize The Incident Management System as outlined in this guideline and the Gloucester County Incident Management Plan, at every incident. These concepts are covered as part of the required Incident Command System and National Incident Management System (NIMS) courses and it is not the intent of this guideline to revisit all of the concepts but rather to cover the main components.

2. **Establishing Command**

2.1 The first arriving officer, or senior member if an officer is not present, shall report a size up, initiate accountability, and notify the Gloucester County Communications Center by radio that they have assumed command. Command name should usually be determined by the location name whether that be the address or business name.

2.2 Should a more senior officer arrive at the scene then they should be briefed on the situation and may either support the existing command structure or assume the Command function. The Gloucester County Emergency Response Center shall be notified of the later situation.

2.3 Command is responsible to ensure that all of the needed components of the Incident Management System are either staffed or the responsibilities are covered. Naturally, Command is always established first followed by staffing the Crew, Group, Division and other operational assignments. The span of control must always be maintained and, while the initial supervisory responsibilities are being conducted by Command, they may be staffed by individuals once adequate personnel are on location (e.g. Command Staff, Accountability, Section Chiefs, Branch Directors, Divisional/Group Supervisors, Strike Team/Task Force/Unit leaders, General Staff).

3. **Scene Designation**

3.1 Divisions

3.1.1 'Division A' will be the address side or front of the building and the nomenclature will work in a clockwise fashion around the structure. 'Division B' will be the left side, 'Division C' is the rear of the structure while 'Division C' is the right side.

3.2 Floors

3.2.1 'Division 1' is the first floor, 'Division 2' is the second floor and 'Division 3' is the third floor, etc. The 'Basement' and 'Roof' terms are self explanatory.

3.3 Groups and Crews will be used to address task oriented functions.

	Policies, Procedures and Standard Operating Guidelines Manual CBRNE Incidents	Page 1 of 1 Document ID: SOG#6010 Issue No: 1 Issued Reviewed Approved by: District Fire Chief Executive Committee

1. **Purpose and Scope**
   1.1 This guideline will provide the protocols for dealing with incidents involving Chemical, Biological, Radioactive, Nuclear or Explosive (CBRNE) incidents traditionally called Hazardous Materials responses. Mantua Township Fire Department personnel are trained to awareness and operational level response activities. The operational activities are typically defensive in nature except when dealing directly with customary fire situations.

2. **CBRNE Incidents**
   2.1 CBRNE incidents, beyond that which is encountered during customary fire situations, will usually require the activation of the Gloucester County CBRNE Team.
   2.2 Department personnel will respond to incidents involving flammable gasses and flammable/combustible liquids, commensurate with their training.
   2.3 Monitoring equipment will be used to define the hot zone and the extent of the hazard. Ones personal senses are not to be used as direct reading instruments!
   2.4 Care shall be taken not to contaminate personnel and PPE with chemical exposure. Should that occur CBRNE Team and EMS personnel will be consulted for a course of action. Contaminated PPE will have to be isolated and dealt with appropriately.
   2.5 Fire Department personnel will not deal with incidents involving radioactive and/or explosive materials. Assistance may be given in a support role to Law Enforcement and/or CBRNE personnel.
   2.6 When responding to bomb threats stage at least 1 block away and work with Law Enforcement personnel to assist with evacuations and be prepared to respond to an ensuing fire/explosion. Care must be exercised since the possibility of secondary devices exists.

Serious Penalty Calculation - (rev-04/01/2012)
Paulsboro Fire Department
1502 Swedesboro Avenue
Paulsboro, NJ 08066

Inspection: 316851732

Citation 1, Item 6s

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